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DR. W. R. BERRYHILL,  
CHAPEL HILL, N. C.



# The Health Bulletin

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CURRITUCK COUNTY HEALTH CENTER  
CURRITUCK, NORTH CAROLINA

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## PUBLIC HEALTH AND THE PRIVATE PHYSICIAN\*\*

### Obligations and Opportunities

JOHN R. BENDER, M.D.\*\*\*

Winston-Salem, N. C.

As a member of the Board of Health of Forsyth County and also of the State Health Department, I have been aware of the caustic remarks and unjust criticism by laymen and professional colleagues alike, who, out of selfishness or misunderstanding, have expressed the backward views of short-sighted personalities rather than the long-range vision of mature judgment. There are few physicians in private practice who are not alert to the need for improvement in the treatment of individual illness or injury, but entirely too many overlook their opportunity for leadership in planning efficient local health centers, hospitals, and medical services for their communities. When we physicians fail to participate in community health planning, we are neglecting our civic duty; and those who assume this responsibility as the result of our default may omit medical consultation altogether when they undertake a program of medical care. Inertia on the part of physicians with respect to their

community responsibilities antagonizes the public. The answer "too busy" to attend the sick or to serve on boards, health councils, and agencies becomes a mockery when these "busy" physicians are seen two or three afternoons a week on the golf links. In order to avoid indictment of our profession, physicians must strive to maintain good will in our respective communities through a willingness to serve.

#### Definition and Objectives

The interrelationship between the local health department, the practicing physician, and the community can be better understood if we analyze the definition of public health. The definition accepted by the United Nations reads:

"Public Health is the art and science of preventing disease, prolonging life and promoting physical health and efficiency through organized community effort for the sanitation of the environment, the control of communicable infections, the education of the individual in principles of personal and community health, the organization of medicine and nursing services for the early diagnosis and preventive treat-

\*Reprinted from the North Carolina Medical Journal.

\*\*Read before the First General Session, Medical Society of the State of North Carolina, Pinehurst, May 12, 1953.

\*\*\*Chairman of the Board of Health, Forsyth County, North Carolina.

ment of disease and for the development of the social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health."

Therefore, public health should be considered an institution created by society to protect and promote a state of community well-being. We may also accept the premise that through public health each community should so organize its efforts as to enable every citizen to realize his birthright of health and longevity. It is in his local community that the physician has his greatest opportunity to become a statesman in public health.

We must recognize the continuous interacting relationship between the practice of medicine and the social and economic pattern of the community. It is here that many of our public health problems exist. These social and economical patterns create different problems in different communities and necessitate the many different divisions in the structure of health administration. Regardless of diversified community problems, however, none of the special divisions of health service should enter fields which will create friction in the structure of medical care.

The object of public health is not merely to prolong life, but to increase the vigor, efficiency, and happiness of all the members of our complex society. This is no easy goal, and it has no appeal for those who fear opposition or criticism. Just as the function of the practitioner is to cure for the individual sick person, the function of public health is to prevent illness in the community. Health officers and private practitioners realize that their duties are the same—namely, the care of the sick and the prevention of disease.

The basic principles of the American Medical Association are: "To promote the science and art of medicine and the betterment of 'Public Health'." The principal objectives of the U. S. Public Health Service, the State Board of Health, and the local health department are the same. This unity of

thought and oneness of purpose has created an endorsement, one for the other. There is no conflict between these agencies and private medicine.

It should be remembered that public health is not limited to preventive medicine, communicable disease control, sanitation, or anything less than the promotion and attainment of better community health. To attain this goal, we must use our vast knowledge and skill for the prevention of disease. The community must rely upon its local health department for the diagnosis and treatment of its various ills. A few community problems which come under the specialized care of the community doctor—the board of health—are environmental sanitation, rodent control, sewage disposal, stream pollution, pasteurization of milk, inspection of food, maternal welfare, accident prevention, and many others. Each of these problems is directly concerned with the prevention of disease and the betterment of the community. The task requires the full utilization of all available professional knowledge and skill; and, far from giving rise to conflict, should create the closest unity between the local health department and the private practitioner.

### **The Health Department— Administration**

The health of any community with a local health department rests upon a tripod—namely, the health department, the practicing physician, and the private citizen. The health department, under the local health officer, is the administrator of such community assets as federal and state funds, grants, gifts, fees, taxes, appropriations, and so forth. This supportive leg of the tripod, which I choose to speak of as administrative, is closely associated with the various communities of the county health districts, and the health officer acts as liaison between the individual citizen and his county board of health, the State Board of Health, the federal government, and the U. S. Public Health Service. This administrative leg was created by legislative action, first

in the establishment of a State Board of Health and later in the establishment of local boards.

Power delegated to the local boards of health through constitutional and statutory authority gives the health department of each county or health district local autonomy. The authorization reads:

"The County Board of Health shall have the immediate care and responsibility of the Health interest of their County. They shall make such rules and regulations and impose such penalties as in their judgment may be necessary to protect and advance the public health."

This sweeping grant of power to legislate in health matters gives the local health department autonomy which is respected by the courts so long as it does not run counter to state and federal constitutions and statutes. With this delegated power goes the responsibility of each physician in the community to analyze local situations as they arise. Where conflicts or friction exist they should be met with an honest, courageous, objective approach, with a sharing of responsibilities and a mutual confession of errors. The achievement of our purpose—to protect and advance the public health—does not require all sweetness and deference, for such an attitude or purpose would be worse than no purpose at all. Only in honest disagreement, provided it does not reach the point of stifling the effectiveness of the health department, will the department grow, develop and move forward.

#### **The Private Physician—Construction**

This brings us to the second support of the tripod, which I propose to call "construction." The practicing physician, through membership in his county medical society, State Medical Society, and the American Medical Association is the main pillar of support. This affiliation brings together the physician in private practice and the physician in public health in a fraternal association. It provides social relationships, one with the other, and affords an opportunity for critical ex-

amination of the strengths and weaknesses of physicians in various fields of practice. Each particular field deserves and should enjoy the confidence and respect of the others.

The private physician is trained to diagnose and treat individuals, but he is not trained or experienced in treating the body politic—the whole community. This body politic can be treated definitively only by a team of professional health workers, engineers, sanitarians, health nurses, technicians, clerks, and others working together. To delegate to or expect from the private physician definitive treatment of civic ills is failing the community and aggravating any conflicts which may exist between the physicians and the health officer, as well as leaving the medical profession vulnerable to attack by those who wish to vilify our system of practice.

The health department affords the best single public relations medium the medical profession can develop. An active committee in each county medical society is needed for consultation with the local boards of health and health departments. Such a committee will make sure that our health services are kept in useful fields. It is time for us to take inventory and make a careful appraisal of our services versus our present needs, and also to plan discreetly towards the needs of the future.

#### **The Private Citizen—Unified Action**

This brings us to the third support of the tripod—the one which I call "Unified Action." Without the former supports—administration and construction—the system of community health would fail. Without a third support, the other two would become ineffective. While the health officer and private physician are indispensable, the actual working power should be drawn from the citizens of the community. Such power can be obtained only by coordinating the efforts of the private physician and the public health practitioner. The American people are greatly interested in the alleviation of human suffering, in the social implications and economic penalties of disease, and in

the improvement of Man's lot through preventive medicine and public health. The public concept of disease has changed from regarding it as inexorable fate or the wages of original sin to tangible enemies which can be defeated by proper organization and financial support. This change of attitude has created a public demand from which the physician and health officer cannot escape, lest by public pressure and political power they find themselves subservient to bureaucracy.

The principal health need of any nation as socially, technically, and scientifically advanced as ours is an instrument that will offer an intimate, personal service to which individuals can turn for assistance and guidance, in times of physical and mental distress, and a basically sound diagnostic and therapeutic service that will assure the individual a good first line of protection against the common hazards of illness and injury. To a large degree—culturally, and in private practice—the family physician is this instrument; therefore, the health needs of a nation depend upon the success or failure of the practicing physician in discharging his responsibilities.

#### **Loss of Confidence Despite Progress**

I am aware of the remarkable progress made within the life span of this generation, and I am also aware that medical science is progressing at an almost unbelievable rate. Approximately 80 to 90 per cent of the therapeutic agents and diagnostic tests which are considered routine today were unheard of or regarded as rarities a decade ago. As these therapeutic adjuncts have emerged from the laboratories to the field of everyday practice, the health of the community has proportionately benefited.

More notable, however, than the recent progress made in medical and surgical techniques and immunizations has been the advance in environmental sanitation, insecticides, nutrition, hospital construction, economics, screening tests, and mass surveys for early case finding. The medical profession today, as never before, is seeking better health

care for its people through continuous research, improved methods of sanitation, more careful inspection, stricter enforcement of the Pure Food and Drug Act, and many other day to day services.

The citizens of America enjoy the best medical care of any country of the world. The system of American medicine is the best the world has ever known, and the American Medical Association is acclaimed the medical leader of the world. In spite of its record of service, however, this system, which is the best to be found, and which continues to get better, is being vilified by those people to whom it is giving so much.

#### *Why?*

I do not have all the answers for all the whys, but I think we can find many of the reasons from a statement which appeared in an editorial in a metropolitan newspaper several months ago! "Many a man frankly doesn't care whether the efficient machine in the white coat is socialized or not, because he feels the machine doesn't give a damn about him."

We should read in this not an attitude of belligerence, but a disturbed concern over the loss of confidence in the American doctor. As the third support of the tripod, the private physician has an opportunity to restore public confidence in American medicine. We have lost such confidence because we who are presumably above the average in our community, with superior training and unquestionable standing, have failed to play our proper role as private citizens.

#### **The Fault and the Remedy**

Why do medical men default in their responsibilities as citizens? Is it because we have concentrated on the scientific aspect of medicine and lost touch with the social, economic, and political realities of today? Has our scientific growth isolated us from the complex problems of modern civilization? As a result of superior training and endowment, practicing physicians today should play a major role in the affairs of the county,



state, and nation. This we must do if we are to retain our freedom not only in medicine, but in our way of life.

As practicing physicians, we must concern ourselves with the following:

1. We must keep flowing a never-ending stream of scientific and technical advances in medicine, in order to give our patients the best possible medical care. The patient's right to skilled medical care must always be respected. There must be absolute teamwork and liaison between the practicing physician and the various health agencies.

2. We must concern ourselves with the economic, social, and political aspects of medical care as it involves the present and future welfare of the American people. The patient's welfare must always be our primary objective.

3. We must approach the future with a keen insight into the new problems which have been created by the rapid progress of medicine. The prolongation of life has produced the new problem of finding ways and means to prevent and control the degenerative changes leading to chronic illness. The lengthened life span has resulted in an ever increasing burden of human suffering attendant upon the vicissitudes of old age and economic strain. If we aid people by adding more years to life, we must also aid them by adding more life to years. As citizens we should use our influence and knowledge in helping to improve the attitude of industry toward employing older persons and in getting insurance companies to extend medical coverage to protect the added years.

A community, like a private business, needs to talk out its problems. The people need to understand what goes on above and below the range of their immediate vision. They need to understand the complexity of their community problems and the over-all effect of these problems on their environment, their economy, their livelihood and their health, and to develop an over-all program. Our task in such a program is to make known the answers, through community education and the promotion of sound voluntary health

insurance plans. We see in this that the solution of our main problems, as an integral part of our community welfare, through the third leg of our tripod is: (1) an atmosphere of friendly understanding and health education between doctors and the general public; (2) recognition that the doctor of medicine exists for the benefit of the people and not for the benefit of the profession; (3) recognition that medicine is a social as well as a biologic science; (4) recognition that it is necessary as never before for the private physician to discharge his responsibilities as a citizen.

### Conclusion

The task of the future cannot be solved by formulas alone. We must be wise and understanding as well as courageous, and as professional men dedicated to the saving of human lives, we must be willing to leave the direction of human affairs to those who believe in duplicity, dishonesty, or force. Leadership in moral responsibility is sorely needed, and recognition of this need will be the beginning of our realization that something must be done. We must take every opportunity to bring a knowledge of moral responsibility into every facet of community life. Our best friends in any community are our patients who look to us as leaders. We should take advantage of this close, personal association to teach them their moral responsibilities and to show them that the health of a nation rests on the health of its individual citizens.

In order to have a healthy and strong nation, we must be healthy and strong ourselves. Reforms must come from within and not from without. When we see ourselves as private citizens as well as physicians, and as an integral part of our community, we will then acknowledge our responsibilities and lead others to do the same. The community, the health service, the social and economic structure of government will then reflect the honesty, integrity, and ability of our profession.

We should remember that medical men in the past won their standing,

not as scientific machines, but as sympathetic and understanding human be-

ings, and we should obey His command, "Go Ye and Do Likewise."

## FLUORIDATION OF PUBLIC WATER SUPPLIES

By ERNEST A. BRANCH, D.D.S.

The Council on Dental Health of the North Carolina Dental Society is sponsoring this series of articles on Dental Health. The writer, Dr. Ernest A. Branch, is the Director of the Division of Oral Hygiene of the North Carolina State Board of Health.

### Present Status of Fluoridation

The current state of fluoridation cannot be termed the status quo, in the popular use of that term, for it is constantly changing. Fluoridation is a going concern with each week, even each day, showing more and more evidence in its favor and phenomenal gains in its acceptance as a preventive measure. From figures released November 1, 1953, we find that in the Nation 15,914,227 people in 833 communities are drinking fluoridated water. To this number will be added 14,749,994 citizens of 366 communities in which fluoridation has been approved. The figures for North Carolina show that fluoridation is in operation in 20 municipalities serving 513,620 people and that it has been approved in 7 more towns with a combined population of 146,797. In our State, then, more than 660,000, or approximately one-sixth of the population, will soon be using fluoridated water. These figures do not include the 3,000,000 people in the United States and an appreciable number in North Carolina who have been drinking water containing naturally borne fluorides all of their lives.

It might be well to define the term, fluoridated water. It is water to which a small amount of a fluoride salt, a natural constituent of water, has been added in order to supply the deficiency and bring the content to a certain level which has been found to be beneficial in reducing the incidence of tooth decay. The generally accepted amount

is one part per million. This is such an infinitesimal amount that a person drinking 8 glasses of water a day for 16 years will consume only an ounce.

We believe that the fact that many water supplies are deficient in this natural element is to be accounted for through soil erosion. The fluoride salts which are added to water are the same ones which occur naturally. It will be seen, then, that fluoridation is a matter of nutrition and not medication. Adding fluorides to water is comparable to fortifying flour, that is, returning to refined flour the minerals and vitamins which were taken out during the milling processes.

Last month we cited a few of the many pilot studies in fluoridation. There are now, as there have been for years, many groups of physicians, dentists, bio-chemists, and other scientists devoting much time and thought to this field of research. The average citizen, or even dentist, does not have the time or the training in research techniques to read and evaluate the voluminous reports of the various studies, experiments, and tests in order to decide for or against fluoridation. As in many other matters pertaining to health we must rely on authoritative sources for information and advice. Of course, we should be certain that our sources are authoritative.

Fluoridation has the backing of an impressive array of scientific organizations. Among them are the following groups with the dates of endorsement.

State and Territorial Dental Health Directors, June 8, 1950

American Association of Public Health Dentists, October 29, 1950

State and Territorial Health Officers, November, 1950

American Public Health Association, November, 1950

United States Public Health Service, April 24, 1951

North Carolina Dental Society, May 1, 1951

National Research Council, November, 1951

American Medical Association, December, 1951

The unqualified endorsement of these societies and associations should assure even the most faint hearted and cautious that fluoridation is a safe and effective public health measure. North Carolina communities were "not the first by whom the new was tried." We hope they will not be "the last to lay the old aside."

### **Fluoridation is a Community Responsibility**

In the discussion of the present status of water fluoridation we listed some of the National and State dental, medical, and public health organizations which have approved this preventive measure. To this list may now be added the American Academy of Pediatricians. The recent endorsement of this group of specialists in child health brings added reassurance of the safety and effectiveness of the fluoridation of communal water supplies for the reduction of the incidence of tooth decay.

As typical of the recommendations of the several groups, we quote the one adopted by the State and Territorial Dental Health Directors.

"Resolved, That the State and Territorial Dental Health Directors recommend the fluoridation of public water supplies for the partial control of dental caries, where the local dental and medical professions have approved this program and where the community can meet and maintain the standards required by the State health authority."

This brings us to the procedure to be followed by a community wishing to join the ranks of the 833 cities and towns now adding fluorides to their water supplies. First of all, it should be understood that fluoridation is always initiated locally. It is never imposed

on a community by a state or federal agency. However, there are certain safeguards which have been included by the North Carolina State Board of Health in its policy which approves and recommends fluoridation. These requirements, in short, are: (1) that the measure must be endorsed by the local dental and medical societies, by the local Board of Health, and by the municipal governing body; and (2) that the procedure for adding fluorides to the water supply must comply with standards established by the State Board of Health.

The first move toward fluoridation in a community may be made by any local group, such as civic club or a parent-teacher association. Information and assistance may be secured from the local dental society and health department, as well as from the State Board of Health and the State Dental Society. Of course, a preliminary step is to determine the natural fluoride content of the water supply to find whether or not the addition of a fluoride compound is indicated.

A matter of interest is the cost of fluoridation. This is effectively answered in the title of a booklet by the Public Health Service, "Better Health from 5 to 14 cents a year through Fluoridated Water." This represents the per capita cost of the equipment, amortized over a 20 year period, and the yearly supply of the fluoride compound. The three compounds generally used are sodium fluoride, silicofluoride, or sodium silicofluoride.

In conclusion, two reminders are in order. For the first we quote a paragraph from the above mentioned publication.

"To gain the full benefits of fluoridated water, children must drink it during the period their teeth are forming, or from birth to about age 8. Children who are older at the time fluoridation is started receive some protection against dental decay, but not as much as the younger children. The protection obtained by children continues throughout life."

For the second reminder, we call attention to the phrase in the resolution by the State and Territorial Dental Health Directors, "for the *partial* control of dental caries." The fluoridation of water supplies is not a "cure-all." It does not prevent all tooth decay

and there is no evidence that it will retard dental decay that has already started.

"Visit your dentist" is still the most important dental health rule. Regular dental care is essential to good dental health.

## LEGAL PROBLEMS OF PUBLIC HEALTH\*

WILLIAM McW. COCHRANE, Assistant Director  
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It may be helpful, briefly, to trace the history and pattern of health legislation in North Carolina, as an aid to understanding why our health laws and regulations need attention today. The first substantial piece of health legislation applicable to the territory which was later to become North Carolina, was enacted in 1712 by the General Assembly of the Province of Carolina. It was entitled "An Act for the More Effectual Preventing of Contagious Distemper." It was, of course, a lifetime quarantine law and it appointed a Commissioner of Health for the purpose of inquiring into the state of health of persons arriving on vessels into the ports of the province. At that time the main port was Charleston, but it also applied to the other minor ports, minor at that time, but lately becoming more important, which were located in North Carolina.

In the 241 years between the General Assembly of 1712 and the General Assembly of 1953, literally hundreds of pieces of health legislation have been spread on the Statute Books of North Carolina. Most of them were aimed at the more effectual preventive of one or another of the myriad of threats to the public health which existed then and exist now. In terms of sheer volume and number, however, comparatively few of our statutes enacted prior to the Civil War had anything at all

to do with health. The statutory situation in 1854 illustrates this point. There were very few statutes at that time on our books having anything to do with health. By that time though, there were brief statutes for quarantine on ships and in incorporated towns; in cases of smallpox and other infectious diseases there were rudimentary statutes. And, they applied only after the situations had gotten pretty bad; they weren't very effective as preventive measures. There was a statute providing for a limited and very interesting meat inspection. There was one declaring stagnant water, dead animals, privies, slaughter houses, and some objectionable substances to be nuisances in seaport towns, even though some of those things were necessary, they were nuisances if they were not properly constructed. But, this statute didn't apply to inland towns; there was no protection anywhere except in the seaport towns. There was a statute providing for the control of disease in cattle which relied on a very ingenuous device, I don't know how well it worked. No cattle could be transported from place to place in this State without a certificate to the effect that the cattle were free from disease, and this certificate was a written statement to be signed by any two Justices of the Peace. The law also frowned on putting poison in a neighbor's well, made it a misdemeanor to do that; it made the owner of a dog liable if the dog became mad and bit someone else. And, that

\*Read before the North Carolina Public Health Association at Nags Head, N. C. September, 1953.

was the beginning of our Rabies Statute. All together, the state-wide Statute Laws, of North Carolina on the books in effect for the protection of public health at the time of the Civil War could have been put on about 3 or 4 printed pages. By any standards, the law offered very little more than fragmentary protection to the public health of the citizens of the time. Now, it is familiar learning to you people in public health what happened in public health in the years immediately following the Civil War.

During the next two decades after that time, the State Boards of Health, in roughly the modern pattern, were established by statutes throughout the country in a number of states. And North Carolina followed suit with your own State Board of Health with a statute enacted in 1877. This statute designated the whole membership, the entire membership of the State Medical Society, as the State Board of Health, and it was to act through a committee which had an annual appropriation of \$100 to carry on its work. Two years after, this arrangement was terminated by a statute which created a 9 member board of health in the modern pattern, which would be a regular department of the State Government. However, it wasn't until 1911 that the Board acquired the services of the first full-time administrator, the State Health Officer, and began the development of the modern agency staffed by professional men and women working under the general directions of the Board of Health. This pattern of statutory development of organized public health work at the State level was very similar to the development at the local level. It is true that town government from earliest colonial days had to concern itself with threats to the community health, and had to take action. The action was usually emergency action and was not often preventive, prospective, regulative action. But, it is also true that organized health work under the statutes in the modern sense at the local level largely during the period since the Civil War, was under a sta-

tutory pattern paralleling that of State health work. North Carolina's first statute providing for a state-wide system of county boards of health was enacted in 1879 when the legislature decreed that each county should have a county board of health composed of the entire membership of the county medical society, plus the Chairman of the Board of County Commissioners, the Mayor of the county-seat town, and for some reason, no reflection on the gentleman, the county surveyor. I suppose his familiarity with the conditions out in the county accounted for his being on that early board . . . he was surveying farms. This board was as unwieldy for administrative purposes, as you can readily see, as the original State Board had been. And like the old State Board, the 1879 county board functioned in practice as something on the order of a medical vigilante committee, organized to deal with epidemics, nuisances, and similar urgent threats to the community's health, usually after they had already begun rather than as an agency administering the laws and regulations aimed at preventing such disasters. Accordingly, such regulations as were adopted by the county boards of health in those days were mostly emergency measures, to deal with urgent situations. And there were a few instances of prospective and general preventive rule making or regulation making. There were a few cases that reached the Supreme Court involving these boards during those years, and they illustrate the emergency or negative nature of their work. Most of these cases were cases upholding the power of these boards to remove smallpox victims to the county pest house. You might say that a pest house was the health center of its day, a far cry from what, fortunately, we are coming to see in North Carolina today.

It was in 1911, as most of you know or have heard, that the county board of health statute was first expressed in substantially its modern form, with a seven member board composed of both lay and medical members. However, for most of the State's counties this formal

statutory change had little immediate effect on the type of health work which was being locally administered. The reason for that was simple, there were no full-time health departments in the counties and the change in the Statute Law did not bring them into being, as by a magic wand. In 1911 the only county health department in the State was Guilford, which was established in that year. And, it was not until 1949, I understand that the State reached the 100% mark in that respect . . . full time local health services.

Now a word about the cities and towns during this long period. Incorporated municipalities in North Carolina have had explicit statutory authority under the General Law since 1893, and under particular town charter provisions since Colonial Days, to tax and spend, to adopt regulations, and to impose penalties in the interest of the public's health. They have what is called plenary power, as do the county boards of health. But, except in a few instances, in a few of the most popular centers, in largest cities, and very few, most of the State's incorporated municipalities have left organized health work to the counties and to the districts today. This is reflected in the Statutes. Since 1877, the statutory emphasis has been on the county as the local unit for health work and since 1935 this development has been extended, as you know, under a statute of that year, authorizing the creation of multi-county, district boards of health, with district health departments working under the district boards of health. As the legislature gradually worked out the statutory pattern of State and local governmental machinery for public health work, during this roughly 50 year period following 1877, it was also adding with each biennial session to the collection of health laws to be enforced by these agencies.

Now these additions to the Statute Laws to date, these health statutes, were often hard won victories, they represented hard won victories after long struggles in the legislative halls. And, accordingly, often today they re-

fect the patchwork quality of legislation which is enacted as the fruit of compromise between opposing factors. Now, that is a process we are familiar with, and it is a necessary process in a democratic, representative government. But, the result sometime is, and it is the result in the case of some of our health education that "like Topsy it just grew." Sometimes a new statute would be added without much reference to other statutes affected by the new statute . . . the relationship wasn't followed through, they didn't fit together properly, it was a patchwork proposition, therefore, necessitating a great deal of interpretation by the health agents who are attempting to enforce it and eventually by the lawyers and the courts when things get a little rough. By the late 20's I think it is safe to say that most of this collection of health laws was in its place on the Statute Books of our State. Since that time, relatively few changes have been made over the last quarter century, compared with the bulk of statutes which are in effect today, which are now older than 25 years. There have been changes in every legislature, but I mean the total bulk of the statute law is older than a quarter of century. And this same quarter of a century has seen greater advancement of the activity of organized public health agencies than they enjoyed in all their years before combined. There has been change in the nature as well as growth in the volume of organized public health work. Public health is today defined much more broadly than it once was, you all know that. The courts are finding it out on occasions. Health agencies have long since extended their work, their sphere of activity to include such vital considerations of modern health, new concepts to some of the people, but none the less recognized as vital, as I understand it, by you people, in increasing degree. Such consideration as prevention of occupational diseases, prevention of accidents, elimination of slums, elimination of bad living conditions, looking at the total environment of the citizen in your health work. The

statutes have not kept pace with those attitudes, they don't reflect them. They reflect the traditional services which you render. They are full of communicable disease control and that sort of thing which we have come to take for granted as part of public health work. A layman, a lawyer looking at what you all are doing and looking a little bit at the history of health work, as one of those people, I am impressed with this, that the expanded program of State and local health departments in North Carolina now flourishing here would probably have seemed but an iridescent dream. Twenty-five years ago, no longer than that, in any county in this State in terms of program, in terms of money, in terms of staff, the development has been enormous. But during this same period, both State and county boards of health have gone through a transition from the standards of merely nominal regulation making bodies . . . that is they had the power to make the regulations but it was for all practical purposes a nominal power because it was not broadly exercised and there were no staffs to enforce the regulations which were made . . . that is large staffs . . . they have gone through this transition from that status to the standards of very active regulation making and regulatory bodies, with large full-time staffs, enforcing standards and regulations which affect the interests, sometimes adversely when money has to be spent, but affect the interest of an increasing number of citizens in their homes, in their businesses, and in their persons . . . for example the venereal disease control statute. Property and personal rights are affected to a much greater degree than ever was the case before in this field. And in this great expansion of regulation and administration the process of improving the techniques of the health sciences has obviously far out stripped the process of improving the health statutes, the regulations and the legal and administrative procedures of enforcement. Public health personnel today, University trained in their specialties for

the most part, possessing the technical knowledges and skills which they need to protect and advance the public health are not so well-equipped when it comes to the legal aspects of their work because of these things I have mentioned. They don't find either quick or clear answers to questions about their powers and duties in their every day work by looking for those answers in the Statute Books. The result is that often you have to play by ear rather than by note because the notes aren't there . . . certainly they are not easy to find if they are there. I think that most of us would agree that our statutory provisions . . . praiseworthy though they were at the time they were enacted, victories though they represented, pioneering efforts though they were, are often full of meticulous details about inconsequential or obsolete matters which aren't important any more in public health. And, then they are silent as the grave sometimes on matters which are widely recognized as being vital parts of health department programs. And, the statutes are more than that, they are frequently ambiguous and contradictory in many places to the point of utter confusion. For example, you are familiar with one . . . one statute provides that the county health officer shall serve as county physician, and another says he may serve as county physician. The practical effect of that, of course, is to leave the decision with the county board of health as to whether he shall or shall not serve as county physician. This same general comment can often also be validly made about the regulations made by our boards of health. These regulations are often too hastily drawn, and usually unpublished, and not always kept up-to-date, and they are sometime inaccessible for all practical purposes not only to the public, the citizens, but often even to health department personnel. Now, you understand that most of these things are drawn by lawyers, of which I am one, and it is not a matter of criticism of anybody for the condition. These are things that have just let slide over

a long period of years, and I think that the major reason has been that in health work, you emphasize persuasion and education and you don't go to court until you have to. I think that is the wisest thing in any law enforcement program that I am familiar with. The interesting thing is that it works more effectively in public health than it does in many others. Prosecution seems to be necessary in enforcing the general criminal laws of the State. But in these circumstances, it is not surprising that sometimes a health officer or other health officials or a sanitarian may discover that he has been adhering to accepted sanitary or health standards and enforcing them, only to find in court that the regulations which he may have been relying on have never been properly expressed or adopted by a county board of health and are, therefore, not valid. I am sure you are all familiar with examples of that situation. I certainly have had enough conversation with health officers and sanitarians to assure me that that is widely the case. Poorly drawn statutes and regulations, of course, are not the exclusive property of public health agencies. Justice Harland Stone, of the Supreme Court when he was Attorney General described the general situation in these words, "We make a prodigious number of laws, in enacting them we disregard the principles of draftsmanship and leave in uncertainty their true meaning and effect." I think if somebody gave a committee here the power to do nothing except go through all of our health laws and repeal anything this committee wanted to repeal, with no power to add a line, we could probably come out with a better set of regulations than we have to start with. Certainly we could eliminate some conflicts that way. So the problem is not more law, in fact it may very well be that a properly drawn health code for North Carolina would be a much shorter thing and certainly a better organized thing than our present health statute. Alexander Hamilton had a comment along the same line which

pointed to the dangers inherent in confused and poorly drawn laws. He said in 1878 in the Federalist Paper, "It will be of little avail to the people that the laws are made by men of their own choice if the laws be so voluminous that they cannot be read, or so incoherent that they cannot be understood if they be repealed or revised before they are promulgated or undergo such incessant changes that no man, who knows the law, today can guess what it will be tomorrow."

During the last two years, there has been considerable interest in doing something about the regulations of county and district boards of health, and I have had the pleasure of working with a number of you in that connection, working with you on revising ordinances, or regulations as the statute terms them, of district and county boards of health. There have been regulations drawn in fields that are new to county health codes which supplement the regulations of the State Board of Health; such as, regulations of private water supplies, one county now has; regulations of swimming pools; regulations of trailer parks. Now some of those things are products of modern day science; of course private water supplies we have had for a long time. But, the trailer park problem didn't exist a couple of decades ago and it is illustrative of the new problems and the new fields of regulations which you folks in health work have had to get into. But, it is also illustrative of subject matter not dealt with in the statutes covering in a general advance of power and undoubtedly in the scope of county boards of health as a legal proposition. But there is a great deal of that new material which the statutes are about, which is one of the major reasons why we need to look into the conditions of these statutes.

Now, on the State side, the State Statutes and the regulations of the State Board of Health, the job of the revision of the statutes to make them fit the present day needs and practices of State and local health agencies, is, of course, a much bigger project than



the job of revising the local regulations. But, it is much more important, much more urgent than the local ones are. I am glad to be able to say that preliminary research has already begun toward this end, toward the study of the problems looking toward the revision of the State Health Laws, and the preparation of a newly codified set of State Health Laws. It was begun by the staff of the Institute of Government at the request of the State Health Authority. Now this project was undertaken by the Institute of Government and the committees from the State Board of Health and local health officers of the State, with the understanding that committees representing the various technical specialists in the fields of public health would work closely and advise the staff members of the Institute examining with care every pro-

vision, every detail of every provision, of our existing health statutes with the public health specialist making the decision with respect to what should be kept, what should be thrown away in the statutes as they now exist. Out of those conferences, and there will be many such conferences, with many people, and a good long time of hard work, would come a tentative draft which would be submitted to the health folks all over the State for their suggestions and study before presentation to the General Assembly. This is a big task as all of you know, and it will require much time and work and plenty of cooperation to bring it to completion. But, I do indeed think that it represents the biggest, single legal problem which we face today in public health in this State.

## NOTES AND COMMENT

By THE EDITOR

### BOVINE BRUCELLOSIS VACCINE CAUSES INFECTION IN HUMANS

The first definite proof that direct contact with the vaccine used to immunize cattle against brucellosis can cause human brucellosis (undulant fever) was reported in an article and an editorial in the *Journal of the American Medical Association*.

With this proof went the warning that the vaccine contains a viable pathogen, and that it should be handled only by qualified persons, preferably veterinarians, and then with the knowledge that accidental contact with it may result in active brucellosis.

The case reports of two 25-year-old veterinarians who became ill after accidental infection with the vaccine, produced from *Brucella abortus*, strain 19, while immunizing calves were described by Drs. Wesley W. Spink and Hugh Thompson, Minneapolis. The doctors are associated with the department of medicine and the student health service, University of Minnesota Hospitals and Medical Schools.

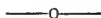
One veterinarian became infected when the needle of the syringe containing the vaccine accidentally entered the palm of his right hand. In the second victim, the vaccine accidentally splashed into both eyes. Both men became quite ill, but recovered following treatment.

"An effective means for immunizing cattle against brucellosis involves the infection of viable organisms of *Br. abortus*, strain 19," the doctors stated. "In the campaign to eradicate bovine brucellosis, strain 19 is being used extensively in the United States and in other countries where Bang's disease is a problem.

"This report on human brucellosis caused by strain 19 does not imply in any way that the use of vaccine should be curtailed. It does emphasize, however, that strain 19 is not innocuous and that it should be handled only by qualified persons, preferably veterinarians, and then with the knowledge that the accidental introduction of the organisms into the human subject may

be followed by illness."

The doctors pointed out that no evidence has been presented to show that persons have contracted brucellosis from cattle vaccinated with this strain.



### DRINKING AND IMPORTANT ACTIVITIES DON'T MIX

If you have something important to do, don't drink beforehand.

The greatest danger from the use of alcoholic beverages concerns the relationship of drinking to subsequent actions, a medical consultant wrote in the *Journal of the American Medical Association*, stating:

"For example, the after-dinner drinks may be perfectly harmless if no important activities are undertaken at such times, where as the drink taken before driving a car, running machinery, or performing any task that demands accurate decisions or mental acuity might be dangerous. The drinker should observe the following rule: For every two drinks, he should wait three hours before undertaking important activities."

Contrary to popular opinion, the mixing of alcoholic drinks does not increase the intoxicating effects of alcohol, since these symptoms depend on the actual amount of alcohol consumed and other factors, he stated. However, this old wives' tale concerning the mixing of beverages may be of value, since promiscuous sampling is likely to lead to greater consumption of alcohol, just as a great variety of foods may lead to overeating, he said.

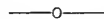
Concerning the amount of alcohol that can be tolerated by an individual, the consultant pointed out that the effect depends largely on one factor—the amount of alcohol that accumulates in the blood.

"The amount that accumulates depends on the amount ingested, the size of the person, the concentration of alcohol in the beverage, the presence of food in the stomach, the rate of oxidation and elimination of the alcohol, and, particularly, on the rate of

drinking," according to the consultant.

"The average person can oxidize and eliminate about six to ten cc. of pure alcohol per hour, so that he could consume about a pint (500 cc.) of 100 proof whiskey in 24 hours without ever being intoxicated if he spaced his drinks properly. On the other hand, a single drink consumed rapidly on an empty stomach may produce measurable symptoms of intoxication.

"A convenient guide for comparison of the amount of alcohol in beverages is that one ounce (30 cc.) of 100 proof whiskey contains about as much alcohol as three ounces (90 cc.) of wine (17 per cent by volume) or 12 ounces (360 cc.) of beer (four per cent by volume)."



### URGES STANDARDIZATION, INCREASED BED CAPACITY OF NURSING HOMES

The time has come for the standardization and an increased bed capacity of nursing homes, in the opinion of Dr. Thomas P. Murdock, Meriden, Conn.

"The overloading and overburdening of the general hospitals, the increased cost of hospitalization, the increase in life expectancy, the large numbers of persons covered by prepaid hospital and medical plans, and the undoubted increase in the number of persons suffering from long-duration illness all indicate that from this time on the nursing homes will take their rightful places in the sun," Dr. Murdock, a member of the board of trustees of the A.M.A., wrote in the *Journal of the American Medical Association*.

The life expectancy and aged population in the United States are continually increasing. Dr. Murdock pointed out. Statistics have shown that older persons are particularly prone to such long-duration illness as heart and blood vessel diseases and cancer. Great numbers of these patients with long-duration and probably incurable illnesses in general hospitals could be cared for as well, if not better, in nursing homes.

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## FREE HEALTH LITERATURE

The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
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## SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
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Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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# THE Health Bulletin



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## rites planned Sunday for Dr. Large\*

Rites will be held here on Sunday for Dr. H. Lee Large, prominent Rocky Mount physician who was actively identified with public health, both on the local and state levels, for many years. Dr. Large died late yesterday afternoon in a local hospital following a long illness. He was 62 years old.

The Rev. Ira A. Kirk, pastor of the First Christian Church, will conduct the funeral services at 3 o'clock Sunday afternoon from the home, 936 Sycamore Street. Burial will follow in Pineview Cemetery. The family has requested that no flowers be sent. However, those interested were asked to contribute to the building fund of the First Christian Church of which Dr. Large was a member.

At the time of his death, Dr. Large was the senior member of the State Board of Health. He had been Rocky Mount's first health officer and was one of the pioneers in public health work in North Carolina.

The following statement was included in resolution passed by the State Board of Health in 1951 and forwarded here today by officials of the state agency:

"Dr. Large has brought to the board a wealth of experience in public health. In fact, he is the only board member who has served as a public health officer. We do not recall a single resolution introduced by Dr. Large before

the board which has not been carried without dissent. He has more than once poured oil on troubled waters at meetings of this board when trouble and dissension was brewing or present."

Dr. Roy Norton, state health officer and one time city health officer in Rocky Mount, declared in a statement, "I have never known a more devoted, conscientious and energetic worker toward every thing for the betterment of his community and state than Dr. Lee Large. He gave freely of his time and energy and served through more than one period of several months as city health officer while refusing to accept remuneration for these services. His passing is a loss to thousands in the city and state he loved but his good work will continue to add health and happiness to many who never knew him."

Last year, the City of Rocky Mount paid tribute to Dr. Large by naming for him the new health center, soon to be constructed here.

Dr. Large was a graduate of the Medical College of Virginia at Richmond in the class of 1917. He started his work with the City of Rocky Mount in the fall of 1917, serving as city health officer until 1931 when he became connected with Park View hospital as urologist. He was also urologist for the Atlantic Coast Line Hospital here. Since 1931 he had served as consulting or relieving health officer.

Also in 1931 the late Governor O.

\*Rocky Mount Evening Telegram, Jan. 30, 1954

Max Gardner named Dr. Large to the State Board of Health. He remained a member of that board until his death. A past president of the local medical society. Dr. Large also took an active part in county health affairs in Nash and Edgecombe and was an active member of the State Medical Society.

Dr. Robert Walker, present Rocky Mount health officer, paid the following tribute:

"In the loss of Dr. Large, Rocky Mount and the State of North Carolina suffered a severe loss. He was one of the pioneers in public health work and his whole heart was wrapped up in serving the health needs of the city and the State. No single man in the State has done as much for public health work as Dr. Large."

Dr. Large was a native of Virginia, the son of the late D. W. W. Large and

Mrs. Emma Botts Large. His mother, who survives, lives in Appalachia, Va. He was born October 6, 1891. He married the former Nellie Pearle Brockwell of Richmond, Va., who survives.

In addition to his mother and his wife, Dr. Large is survived by three sons, Dr. H. Lee Large, Jr., of Charlotte, Dr. Nelson D. Large of Alexandria, Va., and Harry S. Large of Huntington, W. Va., two daughters, Mrs. Harry Hollingsworth of Durham and Mrs. Fred Best of Columbus, Ga.; and one brother, Stallard Large of Appalachia, Va.

Pallbearers for the funeral on Sunday will be Dr. Robert Walker, Dr. C. T. Smith, J. W. Sexton, Earl Ewer, D. S. Johnson and Neal Adkins. Honorary pallbearers will be members of the Boice-Willis Clinic and the Edgecombe-Nash Medical Society.

## AN UNCOMMON MAN\*

The passing from our midst of Dr. H. Lee Large leaves a great vacancy in the life of this community, this state and in many hearts. We shall miss him.

We shall not see his likes again soon.

In an age which placed a premium on mediocre conformance to colorless mass standards, he dared to be a non-conformist. The many-faceted range of his personality sparkled and illumined a great spirit and gave eloquent testimony of the grandeur and sacred worth of the human individual. The force of his personality, the strength of his character, the nobility of his purpose set him apart from his fellowman. He was an uncommon man.

The world—particularly North Carolina—is a little healthier, a little

brighter, a little happier because Lee Large passed this way. His service reached out far beyond those who looked to him as their physician. In infinite ways his work touched the lives of countless people everywhere in North Carolina who have benefitted from the public health program.

Truly no other North Carolinian has done so much for public health in this state as Dr. Large. He was the senior member of the State Board of Health and had pioneered in the state's public health program. In 1917 he became the city's first public health officer and served until 1931 when he became a member of the State Board of Health.

We rejoice that he lived to see his labors bear fruit and to see his name honored among men in so fitting a memorial as the new health center in Rocky Mount which will bear his name.

Hail and farewell!

\*Rocky Mount, N. C. Sunday Telegram, Sun., Jan. 31, 1954

## PUBLIC HEALTH ASPECTS OF COOKING GARBAGE FOR HOG FEEDING\*

By MARTIN P. HINES, D.V.M., M.P.H.\*\*

North Carolina State Board of Health

Those of us who are servants of the people in the profession of public health have or should have an interest in everything that directly, indirectly, or remotely affects the public health. The subject of feeding raw garbage to swine certainly falls in this category. The present widespread outbreak of vesicular exanthema (hereafter called "V.E.") which threatens the swine industry has greatly promoted the cooking of garbage fed to swine. Public health officials are taking advantage of this widespread interest in "V.E." to stimulate and promote the control of diseases of swine transmissible to man. Of these, trichinosis is of most importance.

The feeding of uncooked garbage to hogs under the usual insanitary conditions should not be tolerated by a conscientious local governing body. I do not take the position that garbage should not be fed to swine. The United States Department of Agriculture in 1941 estimated that 200 million pounds of pork could be produced annually if all garbage produced in the urban areas of the United States were utilized for hog feeding.

Producing human food from garbage is obnoxious to say the least, but when we consider that our population in 1975 will reach 200 million and that most other countries have an even higher birth rate, it is very probable that the day will come when our children's children may be happy to have food produced from garbage.

The practice of feeding uncooked garbage to hogs under insanitary conditions affects the public health in four different ways, namely, those dis-

eases directly transmissible from swine to man, those diseases that affect solely swine and other animals, those animal diseases which are extremely dangerous from a civil defense standpoint, and miscellaneous public health problems. I shall elaborate briefly on each of these.

### Diseases Transmissible to Man

1. *Trichinosis*. The life cycle of this parasitic disease of man is well known. The incidence of trichinosis in both man and animals in the United States is the highest of any country in the world. England and Canada both have long practiced cooking of raw garbage fed to swine and consequently have about one-twelfth of the human infection found in the United States. One person out of six in the United States, or about 25,000,000 of those alive today, probably harbor trichinae. To reach this total there would have to be 350,000 new infections each year. Using 50 larvae per gram as the threshold for producing symptoms, 4.5 per cent of all persons infected or about 16,000 should exhibit clinical symptoms each year. This is a great deal higher than the average of 300 cases reported each year in this country. Difficulty in making a clinical diagnosis, inadequate reporting, and mildness of symptoms are responsible for the small number of reported cases. It is estimated that of 60,000,000 hogs slaughtered each year in the United States, 1.5 per cent are infected with trichinae. The majority of the 950,000 infected swine can be blamed on raw garbage feeding. A recent study by Schwartz indicates that the prevalence of trichinosis in farm-raised swine is only 0.63 per cent compared to 11.21 per cent in garbage-fed hogs. It is said that during a lifetime each pork eating American will eat infected pork 200 times. Whether or not this pork has

\*Presented at the 1953 Inter-state Sanitation Seminar, Athens, W. Va. August 24-28, 1953.

\*\*Chief, Veterinary Public Health Section.

been properly cooked will determine its infectivity.

Before leaving the subject of trichinosis a few comments should be made about protection against this parasite through meat inspection. The federal meat inspection service (U. S. D. A.) makes no attempt to inspect swine carcasses for trichinae. To do so would be futile and leave the public with a false sense of security. They do, however, require all pork products customarily eaten without cooking to be processed (heating or freezing), in order to kill the trichinae. A recent survey found that products treated in this manner contained only dead trichinae. Bacon, fresh pork sausage and similar breakfast sausage, ham, pork shoulder and fresh pork cuts that have been cured but not smoked or otherwise processed should be thoroughly cooked before they are eaten.

It is easy to see how trichinae can get into the food of an innocent diner if pork sausage is served. You have all seen a cook place a patty of sausage on the work board by the grill, pat it out, and then place it on the grill to cook. Later the bread is placed on the board where the raw sausage was. When sausage is done, it goes on the bread and the sandwich is picked up with raw shreds of meat that adhere from the board. And how about the "hamburger joint" which partially substitutes pork for beef in the hamburger when the price of pork is cheaper than beef. You have eaten these hamburgers that are so rare they "moo" at you! Yes, even if we do cook our garbage fed to hogs, we must continue our educational efforts toward the adequate cooking of all pork products.

**2. Salmonellosis.** Over 200 species of salmonella have been described and many are found in swine. Causing a food infection in man when contaminated food is ingested, salmonellosis outbreaks are frequent among garbage fed hogs. Poor sanitation contributes to the spread of this disease, but it can be eliminated if hogs are placed in clean pens and given a ration containing no raw garbage.

**3. Tuberculosis.** Swine are susceptible to all three types of tubercle bacilli. The human type is almost always found in swine fed on raw garbage; therefore, it is quite dangerous to feed swine uncooked garbage from hospitals and sanatoria. One study reported 30 per cent of hogs fed on garbage from a tuberculosis sanatorium were infected with the human type of the disease.

**4. Swine Erysipelas** causes a septicemia in swine when acute, and joint involvement when chronic. In man a local lesion at the site of injury is produced upon contact with infected swine. Poultry are also affected with this disease. It is believed that meat scraps in uncooked garbage causes the spread of this disease among swine.

**5. Brucellosis.** (undulant fever) In general, this disease in swine has a greater clinical resemblance to brucellosis in man than the disease in cattle. Hutchings in a study revealed that *B. suis* could be isolated from organs and tissues of infected animals held at 40° F. for as long as 20 days after slaughter. One could conclude from this study that raw garbage could easily spread this disease through swine to man.

**Diseases Affecting Only Animals.** Any diseases that affect the health of our livestock affect the public health, both from the standpoint of a loss of food supply and the damaging effects to our agricultural economy. Hog cholera, "V.E.," and foot-and-mouth disease are the most important diseases spread through raw garbage feeding.

**1. Hog Cholera.** Hog cholera is the most important hog disease in the United States. The mortality is high and vaccination must be carried out each year, once a farm is infected. Uncooked pork scraps in garbage carry the virus. Garbage feeders in Canada cook their garbage and there is no cholera in Canada! The United States now realizes that this disease must be eradicated. Heat treatment of garbage will contribute much to the success of this campaign, for Dr. B. T. Sims, Chief of United States Bureau of Animal Industry, says, "We can never elimi-



nate hog cholera as long as we feed raw garbage."

**2. Vesicular Exanthema.** A disease of swine which first appeared in California in 1932 and remained endemic in this state until 1952 when it spread eastward. In 1952 infected hogs were first seen in Grand Island, Nebraska, and originated from a garbage feeding lot in Cheyenne, Wyoming. Shortly thereafter the disease spread to 32 states. Most outbreaks have occurred in raw garbage feeding establishments while some were in grain-fed hogs that contacted diseased hogs en route to market. Immediately after the outbreak was recognized, the price of pork dropped substantially and many people perhaps stopped eating pork because of the adverse publicity, pointing out the effects on the economy. The greatest threat of "V.E." is that it resembles foot-and-mouth disease and every case must be differentiated by expensive animal tests.

**3. Foot-and-Mouth Disease.** The last two outbreaks of foot-and-mouth disease in this country started in hogs fed raw garbage. Before stopping these outbreaks, 975 farmers had their herds destroyed and it cost the United States \$100,000,000 to stamp out the disease. In recent years we have spent over \$200,000,000 to keep the disease from entering this country from Mexico. No wonder we are terrified at the existing possibility of "V.E." masking foot-and-mouth disease all over the country. Transmission of foot-and-mouth disease virus by infected meat scraps has been known for a long time.

**Civil Defense.** Among the animal diseases that have been listed as those most likely to be used against us in biological warfare aimed at "knocking out" our food supply are foot-and-mouth disease, rinderpest, exotic strains of hog cholera, Asiatic Newcastle disease and fowl pest. Our civil defense authorities already are greatly concerned by the confusion that the recent outbreak of "V.E." is causing because of the marked clinical similarity to foot-and-mouth disease and of the extensive diagnostic procedures neces-

sary to differentiate the two on the occasion of each new outbreak. Actually this is of more importance to cattle men because of the jeopardy in which it places our cattle industry by possibly having foot-and-mouth disease masked as a hog disease. There is little doubt that our enemy will use all possible means to create confusion and disaster. What better means could be used than by seeding our country with exotic livestock diseases?

**Miscellaneous Public Health Problems.** There are several other problems created by garbage feeding under insanitary conditions such as:

1. Solid wastes left from garbage feeding if not disposed of frequently blocks drainage and causes prolific breeding of mosquitoes.
2. Presence of flies, vermin and rats. The latter spread trichinosis among hogs and also transmit other serious diseases to man (typhus, leptospirosis).
3. Obnoxious aerial nuisances are present which local health departments are often requested to have abated.
4. Business and industry are reluctant to move into such an area because of the strong odors and unsightly conditions, making property values and tax returns low.

In conclusion, I am happy to report that North Carolina now has a law requiring the cooking of all garbage fed to swine. This law also takes into consideration the sanitation of such feeding establishments, including rat and fly control. It is administered by the State Veterinarian under the Department of Agriculture. There is complete cooperation between local and state health officials, with agriculture officials responsible for the enforcement of this law. At present, seven laymen and one veterinarian are employed to inspect garbage feeding establishments. Although we have never been a heavy garbage feeding state, we do have several military installations that are providing garbage feeding problems. It is really ridiculous that a nation as civilized as we claim to be has permitted

for so long a time a situation where one-half of one per cent of the garbage fed livestock imperils the entire agricultural economy of the country, not to mention the important public health aspects of garbage feeding. I believe at last we have awakened to the fact that

the prevention, control and eradication of trichinosis, vesicula exanthema and foot-and-mouth disease depend upon the elimination of raw garbage feeding of livestock in the United States. We are at last heading in the right direction.

## GOOD TEETH—FOR YOU, YOUR CHILD, YOUR COMMUNITY

The Council on Dental Health of the North Carolina Dental Society is sponsoring this series of articles on Dental Health. The writer, Dr. Ernest A. Branch, is the Director of the Division of Oral Hygiene of the North Carolina State Board of Health, Raleigh, N. C.

### Topical Application Of Sodium Fluoride To Children's Teeth

In previous articles the case for fluoridation of community water supplies, as an effective and safe large-scale means of reducing dental decay has been presented. Fluoridation, you will recall, is the adjustment of the fluoride content of the public water supply to one part fluoride to one million parts water. The results of much research during the past fifty years substantiate the finding that persons who used fluoridated water since birth have two-thirds less tooth decay than those who have used fluorine-free water. Fluoridation has been endorsed by the leading dental, medical, and public health groups.

To-day, we are thinking about the children who live in areas where there are no municipal water supplies—children who live on farms and in small villages. In North Carolina, with a predominantly rural population, there are literally thousands of children who cannot drink fluoridated water.

Fortunately, these children, too, can benefit from fluorides. Researchers have discovered and perfected a method for applying sodium fluoride directly to the surfaces of teeth. This is called the topical application of sodium fluoride. Surveys have shown that this

treatment has reduced dental decay by 40 per cent in large groups of children. Please note the modifying phrase, "in large groups of children." Parents should know that results vary among individuals and that every child may not be benefitted. However, we believe, along with the Council on Dental Health of the American Dental Association, that the favorable results justify our recommending to parents the topical application of sodium fluoride to their children's teeth by their dentists.

For this partial protection against tooth decay a two per cent solution of sodium fluoride is used. The dentist cleans the teeth thoroughly before the first application. He then dries the teeth with compressed air. To the dried enamel surfaces he applies the two per cent solution of sodium fluoride, allowing it to dry on the teeth. A series of four separate applications is given at intervals of from three days to a week. Four applications are essential for maximum effectiveness.

The first such series of treatments should be given when a child is three years old to protect his baby teeth. The treatments should be repeated at three to four year intervals, or at about the ages of 7, 10, and 13 years. In this way all teeth will be treated soon after they come in the child's mouth. If applications have not been given at the suggested ages, they may be given later for they are effective at any age under 16.

As stated above, the topical application of sodium fluoride is recommended for children in rural areas and for

children in towns which have not yet fluoridated their water supplies. Water fluoridation, where possible, is more economical and far reaching as a preventive measure.

Neither the fluoridation of water supplies nor the topical application of sodium fluoride will prevent all tooth decay. Other measures recommended

for the promotion of good dental health are:

1. Regular visits to the dentist for the early detection and correction of dental defects.
2. Brushing the teeth immediately after eating.
3. Eating a balanced diet with sweets reduced to a minimum.

## A CONQUERING HERO

By WILLIAM H. RICHARDSON

State Board of Health  
Raleigh, North Carolina

In view of the fact that North Carolina recently dedicated a hospital for the treatment of tuberculosis at Chapel Hill, which cost \$1,186,000 we are going to consider in this article the evolution of sanatorium treatment for tuberculosis, together with some facts about the pioneer in that field in the United States. The new institution was named in honor of the late Lee Gravely of Rocky Mount, whose efforts in behalf of tuberculosis sufferers marked him as a great North Carolinian.

This country of ours have produced many heroes who did not wear uniforms. One of these was Edward Livingston Trudeau. He was born in New York City, October 5, 1848. His father and his maternal grandfather both were physicians. When he reached maturity he, himself, decided to follow in his father's and grandfather's footsteps and enter the medical profession. This, however, was after the death of his brother, who was a victim of tuberculosis. Prior to his brother's death, he had decided to enter the navy. He was about to enroll at Annapolis when his brother became ill, and he decided to remain with him, instead of pursuing his original intention.

Trudeau entered medical school in 1868. Upon completing his studies, he married and began practicing in New York. Soon he began to feel tired all the time, and was advised to have his lungs examined. The physician who

examined him found that, his left lung was actively tuberculous. At that time tuberculosis, which was called consumption, was considered absolutely fatal. This diagnosis altered the pattern of Trudeau's whole life.

### Braced For A Fight

After being told he had tuberculosis, he said that he was at first stunned, and the world seemed to black out. Thinking, he had only a short time to live, he decided to go to the Adirondacks, in order to be out in the open as much as possible. He reached his destination in May, 1873, and took up residence at a hunting lodge. Life in the mountains improved Trudeau's health. He began to eat and sleep normally and his fever left him. He returned to New York, in September, having gained 15 pounds. Before long, however, he began slipping again, so he decided to spend the next winter in the mountains.

The lodge keeper finally was persuaded to let him remain for the winter months. The feeling at that time was that a person with tuberculosis should go to a warm climate. On one occasion, during his winter stay in the Adirondacks, it was necessary for Trudeau to take shelter in a snow cave, on his return to the lodge. He went through that first winter almost free of fever. When the guests began to return, the following spring, they

were astonished to learn that Trudeau and his wife had remained up there throughout the winter.

Upon the decision of the lodge keeper to move to another location and open a hotel for the winter, Trudeau began looking for a place where he could have a house of his own. He finally decided to take up residence on Saranac Lake. He rented a house from a guide. The keeper at the lodge where he formerly stayed lent him some furniture. He spend much of his time hunting. Sometime after arriving at Saranac Lake, he was struck by a brilliant idea—that of building a sanatorium similar to Brehmer's in Silesia, in Europe. Brehmer first used the sanatorium treatment in pulmonary tuberculosis cases.

In the summer of 1882, Trudeau met Dr. Alfred Loomis, who had treated him, from time to time, and told him of his plan to build a cottage at Saranac Lake, where patients of moderate means could get rest and care, and where he could start his sanatorium methods of treating tuberculosis. Dr. Loomis agreed to send Trudeau patients and to examine them free of charge.

When Trudeau went down to New York that summer, he called some of the people he knew and asked for subscriptions for the sanatorium. Many could not understand what he was trying to do. They argued that tuberculosis could not be cured. However, he did collect more than \$3,000. He kept adding to the sum and, finally, was sure that, in due time, he could start putting up a small building. The first cottage was completed in February, 1885. It had just one room, 14 by 18 feet, and a porch so small that only one patient could sit there at a time. The first occupants were two factory girls, who had been sent up by Dr. Loomis.

### Inspired By Koch

While Trudeau was at work planning his sanatorium, Koch, who was a German scientist, announced that he had discovered the tuberculosis bacil-

lus. This occurred in 1882. Then the germ theory was comparatively new. Trudeau had read of the experiment of Pasteur, the French scientist, who believed that all infectious diseases came from living organisms. He learned much of the work of Lister, who had proved that antiseptics could keep wounds from becoming infected. When he learned of the discovery of Koch, regarding tuberculosis bacillus immediately he became very much interested. He felt that if he could learn to grow the bacillus outside of the body and then give tuberculosis to animals, he might be able to discover something that would kill the bacillus in human beings.

He went to New York and begged some of the old professors to teach him how to find the bacillus. While they were indifferent to the discovery claimed to have been made by Koch, he saw in it a whole new world, in the field of fighting tuberculosis.

They gave him a place, in a dingy old laboratory; and, after much work, he was able to find tuberculosis bacillus. The next step was how to conduct experiments that would show how to be able to kill it in the human body, if possible.

When he returned to Lake Saranac, he fitted up a room, 8 by 12 feet, in a frame cottage, and began the tedious task of making experiments. He faced many discouraging situations, but kept constantly at work for humanity. All the while, friends put up many buildings for his sanatorium; they helped him manage the funds collected. The physicians of the younger generation kept him supplied with knowledge they gained.

### Experiments With Rabbits

He experimented with rabbits, to learn how changes of climates, rest, fresh air, and food affected the germs of tuberculosis, after they had entered the body. These experiments proved to Trudeau that bad surroundings, in themselves, did not cause tuberculosis, but that, once the disease had developed, it was greatly influenced by a

favorable or unfavorable environment.

The essence of the sanatorium treatment that Trudeau carried out was a favorable environment, so far as climate, fresh air, food, and regulation of the patient's habits were concerned. This same principle still is used in sanatorium treatment of tuberculosis in North Carolina and elsewhere, and it has prolonged countless lives.

As the years went by, the sanatorium at Lake Saranac grew steadily, in building, equipment, and in staff members.

But this great human benefactor was not without his personal sorrows, as well as his joys. Between 1893 and 1904, during which time the sanatorium was steadily growing, he lost his daughter, who was a beautiful and promising young woman, and his son, Ned, who already had begun practicing medicine in New York City. He made the statement that, during these dark and sorrowful days, it was the sympathy of his friends that kept him going. Despite his great losses, Trudeau maintained his courage and continued to carry on his work, with an indomitable will. He reached the end of his earthly journey in 1915, but the work which he did will ever live as a tribute to one of the great soldiers in the battle against tuberculosis.

While, to the man on the street, the name Trudeau may mean little or nothing, to those engaged in the work of endeavoring to find new ways and means of combating tuberculosis, it will remain a synonym for hard work and courage. It must be remembered that he, himself, fell victim to tuberculosis early in life, and that it was this fact that inspired his great fight, after he had conquered the disease in his own life. In saving himself, he endeavored to save others.

#### Some Tangible Results

If Trudeau were alive today—if he should come to North Carolina—he

would see that the practices he began in the sanatorium treatment of tuberculosis have become general; he would find that North Carolina not only is using his methods, but that it has invested many thousands of dollars to cut down the waiting lists at our various sanatoria. If he should study our statistics on tuberculosis, he would find that, while tuberculosis killed 3,577 North Carolinians in 1916, it was responsible for only 543 deaths last year. The death rate fell from 142.3 to just 13.0 for 100,000 population. That is a large number, to be sure, but think what the total would have been, with our greatly increased population, had the death rate remained what it was in 1916.

If he should visit North Carolina today, Trudeau would find Public Health engaged in a mass x-ray survey in the State, to determine those who are in need of the sanatorium treatment, which he initiated, back in those experimental days, when consumption was considered an incurable disease. Furthermore, this great soldier in the battle against "the great white plague" would find that, already, chest pictures have been made of nearly two million persons fifteen years of age, and older. The goal is an x-ray of the entire population over fourteen.

The gains we have made have been coincidental with the rise in the American standards of living, bearing out Trudeau's findings that persons with healthful surroundings who have fallen victim to tuberculosis have a better chance to recover. The rise in the American standard of living has been due, in no small part, to improvements in the labor laws, which have brought workers not only increased pay, but shorter hours, enabling them to enjoy more time in recreation and sunshine. More money means more and better food, more opportunities for the education of the young, and better housing.

## NOTES AND COMMENT

By THE EDITOR

The immunization status of the children in any health department area is at best difficult to estimate without extensive survey techniques. The Delaware State Board of Health has completed a state-wide survey which is reported in a recent issue of the Delaware State Medical Journal. The information gained during this survey should be of interest to all physicians and public health workers.

The returns were obtained from the parents of some 2000 children born between January 1, 1952 and April 30, 1952. At the time of the initiation of the survey these children were from 8 months to one year of age. By the time the survey was completed the children were from 14 to 18 months of age.

The significant results include:

72% of children had completed immunization against diphtheria, whooping cough and tetanus given as triple toxoid.

25% of children had been vaccinated against smallpox.

3% had been immunized against either diphtheria, whooping cough, or tetanus with preparations other than triple toxoid.

Four infants were immunized by private physicians for every infant immunized at a well child conference.

The well-child conferences immunized chiefly children in the non-white group.

Health officials in Delaware felt the survey again emphasized the need for continuing stress on the importance of immunizations within the first year of life.

\* \* \* \*

Intestinal parasites are now considered by many as "nusiasance" diseases and the lowly worm, once the cause of sickness and disability for thousands, is no longer thought of as a public health problem.

Interesting in-sight into the preval-

ence of intestinal parasitism is given by a recent report from the North Carolina State Laboratory of Hygiene on the incidence of stool specimens found to contain parasites during the period January through June 1953.

During the six month period, a total of 10,121 stools were examined and 1,876 or 18.5% were found to contain some type of parasite. These specimens were received from 60 of North Carolina's 100 counties. Eighty per cent, or about 1,500 of the positive specimens contained hookworm. A total of 277, or 14.8% contained ascaris; 47 specimens were positive for oxyaris, and 23 contained *E. histolytica*. Some 41 specimens showed evidence of multiple parasitic infestation with hookworm and either ascaris, oxyaris or trichuris.

Fifty-six per cent of the positives come from five North Carolina counties, New Hanover, Duplin, Hoke, Cherokee, and Columbus.

Although these specimens were obtained from individuals who were suspected of having parasitic disease, and do not represent a random sample of the total population, they do indicate a health problem of considerable magnitude may be lurking under our feet.

\* \* \* \*

### VOMITING IN CHILDREN MAY BE SIGN OF EMOTIONAL DISORDER

Vomiting may be the first and only indication of an emotional disorder in an infant or child, in the opinion of Dr. Paul C. Laybourne Jr., Kansas City, Kan.

"The infant has only a few ways in which to express undue emotional tension," Dr. Laybourne wrote in the American Journal of Diseases of Children, published by the American Medical Association. "He can refuse food, cry excessively and vomit."

Much psychological vomiting in infants and children is the result of a disturbing atmosphere at home, Dr. Laybourne pointed out, stating:

"It is obvious in such cases that direct treatment of the baby or child is unnecessary. Psychological vomiting in infants is easily diagnosed by the simple expedient of hospitalizing them. Almost universally the vomiting stops with the removal of the baby from the disturbing environment of the home. This observation helps in making a differential diagnosis between organic and psychologic disease."

If no definite organic basis for the vomiting of a baby can be established, the emotional attitude of his mother should be thoroughly investigated according to Dr. Laybourne, as a severe emotional disturbance in the mother can be transferred to the baby.

"Just exactly how the psychic tension is transmitted to the child is poorly understood," he said. "If the mother can communicate positive and happy feelings to the baby by the tone of her voice and expression on her face, it would seem reasonable to assume that disturbances in the mother, which produce tenseness and anxiety in her voice, as well as in her behavior, can also be communicated to the child."

Treatment of babies whose emotional disorder is a reflection of that of their parents' requires that the basic emotional difficulty of the parents be resolved, Dr. Laybourne stated, adding:

"Any psychotherapy, therefore, is directly toward the parents and not the child. If a successful resolution of the parents' problem is impossible, the child should be placed in a warm friendly environment, so that it need no longer react to the emotional stresses of those who care for him. Children up to the age of about five years who have emotional vomiting will respond satisfactorily to simple environmental manipulation or psychiatric treatment of the parent."

As the child gets into the school age or older, vomiting becomes more difficult to treat, and combined therapy of parent and child often is necessary, he pointed out.

"Here the symptoms of vomiting may appear less directly related to obvious

emotional disturbances in the parent," he added. "The vomiting often makes its appearance following a traumatic experience to the child, such as an operation or infectious illness. In these cases it would appear at first glance that the operation or illness was the 'cause' of the vomiting. The operation or infectious illness is only the trigger mechanism setting off the reaction which has been building up for many months or years previously. The basic difficulty is to be found again in the parent-child relationship, and the ultimate cure is brought about by correcting the basic difficulties in the parent-child relationship."

Dr. Laybourne stated that vomiting in adolescents and adults also may be a common symptom of an emotional disturbance.

Dr. Laybourne is associated with the departments of pediatrics and psychiatry, University of Kansas School of Medicine.

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### CARE AND PLANNING CAN SALVAGE RETIREMENT PRODUCTIVITY WASTE

With greater care and planning, much valuable productivity that now is being wasted by compulsory retirement can be salvaged, it was stated editorially in the Journal of the American Medical Association. Older workers who are capable of and desire employment should be permitted to work, it added.

As firms take great pains to choose whom they will hire, there is no reason why they should not concern themselves equally with the problems of whom they will retire, the editorial said. Retirement policies, in addition to setting the conditions of retirement, should state how older workers may be profitably kept on the job and how their status is to be determined.

The best way to determine who should be retired, according to the editorial, is for a firm to create a panel to judge each case on its merits and determine whether the worker should continue in his present status, go on a modified schedule, transfer to a less

demanding job, or be retired. The panel, which should include one or more high level executives and an industrial physician, should seek advice, when necessary, from the employee's immediate supervisor, the company's personnel director, or the local union. Restudying of methods of work and a restudying of training methods also will aid in the solution of the problem, it was added.

"In our aging population the gap between retirement and death is widening," the editorial pointed out. "In 1900 it averaged about two and a quarter years. This had doubled by 1950 and is still increasing. The reason for this is a combination of two factors: the saving of more lives between birth and age 35, and the policy in many firms of compulsory retirement at an arbitrary age, usually 65.

"There is a growing recognition that a fixed retirement age is unprofitable for the employer, frustrating for the employed, and eventually disastrous to the national economy. Although some workers become inefficient at 65 or younger, a fixed retirement age works a hardship on the productive majority along with unproductive minority."

Although it is true that aging workers suffer a gradual diminution in strength and in the speed of their muscular movements, these handicaps are more than compensated for by an increase in skill or accuracy and in reliability and conscientiousness, according to the editorial, which added:

"Many workers reach the age of 65 without showing any signs of slowing up, and they should be allowed to do some work. If the signs of aging are beginning to become apparent, much can be done to salvage the productivity of the worker. A few who are outstanding in production departments, for example, can be taken off production and made foremen or supervisors. Others can be placed where the importance of their increased accuracy outweighs the demand for speed.

"Anything that spares these workers a feeling of frustration adds productive years to their lives. In some cases,

a worker can be kept on at reduced hours or in work that is similar to his usual tasks but less complex. Executives and professional persons should delegate part of their usual tasks to an assistant.

"When a person reaches that stage of life when a modification of his activities becomes imperative, it is sometimes wise or even necessary to change over to an entirely different type of work. If a person knows or suspects that change to another type of work is apt to become mandatory at 60 or 65, he is wise to embark on his second career a few years earlier, because he is then in a better condition to learn his new duties and he has a better chance of finding an acceptable opening."

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### **DON'T GET YOUR VITAMINS OUT OF A COSMETIC JAR**

Alchemy makes alluring ads, but it has no place on milady's dressing table.

Vitamins have their place, but their use in cosmetics may constitute a health hazard, according to Mrs. Veronica L. Conley, assistant secretary of the American Medical Association's Committee on Cosmetics. Writing in Today's Health magazine, published by the A.M.A., she stated:

"From time to time we hear claims of something new and different in a cosmetic. We are told that some product is a panacea for wrinkles, crepiness and other signs of aging. On the basis of experience, most people view such claims with a sophisticated eye. They want more than an advertising claim to be convinced, since even a quick glance at the most faithful cosmetics user is proof that skin aging proceeds undisturbed.

"This is how we view the recently revived and widely publicized vitamin-containing cosmetics. A decade ago the Federal Trade Commission ordered certain manufacturers to 'cease and desist' from claiming that the addition of vitamins A and D to cosmetics had any beneficial effect on the skin. Therefore, the reappearance of vitamin cosmetics



about two years ago was the occasion for some surprise."

During the last few years, Mrs. Conley stated, much has been learned about vitamins A and D—that they are not always the good substances that they were thought to be. Experience has shown that continued excessive intake can cause serious reactions, she added. Another important fact discovered in recent years is that vitamin A applied to the skin of animals causes local thickening.

"Just what significance this has in people must still be demonstrated, but it does indicate that sufficient vitamin A may cause skin changes," Mrs. Conley pointed out. "Whether they are good or not remains to be seen.

"The question then follows: 'What does all of this mean in relation to the daily use of vitamin A or vitamin A-D creams over a long period?' The answer is: 'We don't know.' In spite of this, vitamin-containing cosmetics are being promoted for use by the general public.

It is fair to ask whether cosmetics are a rational place to use vitamins. Serious vitamin deficiency is rare in this country. So it cannot be assumed that such deficiency is a common cause of the universal skin-aging signs—dryness, lines and wrinkles. There's no good evidence that, in the rare case where a deficiency does exist, vitamins are more effective applied to the skin than taken orally.

"Large oral doses of both vitamins A and D are used successfully by physicians for some pathologic skin conditions. This situation is quite different from the unrestricted application of vitamins on apparently healthy skin for beautification."

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#### **ADDITION OF NUTRIENTS TO FOOD BENEFICIAL TO NATION'S HEALTH**

The addition of specific nutrients to certain staple foods has been beneficial to the nation's health and has encouraged sound nutritional practices, the American Medical Association's Council on Foods and Nutrition reported.

However, it stressed the desirability of the individual meeting his nutritional needs by the use of natural foods as far as practicable. People should learn, it was added, the proper choice and preparation of foods, and better ways to produce, process, store and distribute foods.

The council endorsed the enrichment of flour, bread, degerminated corn meal and corn grits; the nutritive improvement of whole grain corn meal and of white rice; the retention or restoration of thiamine, niacin and iron in processed food cereals, and the addition of vitamin D to milk, of vitamin A to table fats and of iodine to table salt.

"The principle of the addition of specific nutrients to certain staple foods is endorsed for the purpose of maintaining good nutrition as well as for correcting deficiencies in the diets of the general population or of significant segments of the population," it was stated by Dr. James R. Wilson, Chicago, secretary of the council.

"In order to avoid undue artificiality of food supply, foods chosen as vehicles for the distribution of additional nutrients should be, whenever practicable, those foods which have suffered loss in refining or other processing, and the nutrients added to such foods should preferably be the kinds and quantities native to the class of foods involved."

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#### **NIGHT DRIVING HAZARDS INCREASED BY TINTED GLASS**

Use of tinted glass in automobiles or the wearing of colored glasses for night driving is dangerous because it causes decreased visual efficiency, in the opinion of Dr. Paul W. Miles, St. Louis.

"Particularly unfortunate is the popular selection of pink for the glasses and aquamarine green for the windshields," Dr. Miles wrote in Archives of Ophthalmology, published by the American Medical Association. "While pure red and pure green filters may be quite transparent, in combination they are opaque."

Night driving is a similar visual task

to walking into a dark movie theater, according to Dr. Miles. When a person first walks into a dark movie theater there is poor visibility of the seats until the eyes have adapted themselves to the dark although the screen can be seen very well.

In night driving, every change from light, such as headlights, to dark and from dark to light requires a new adaptation of the eyes. This adaptation process is so slow that if it occurred in a dark movie theater the seats forever would remain black again black, just as the objects at a distance or the shadows appear on the road.

"As the driver studies the road at the distance limits of the headlights, he constantly tests his visual thresholds," Dr. Miles said. "Objects come into view, attract attention, and are finally identified, as the automobile rapidly approaches. Under threshold conditions, an image may form on the retina (the part of the eye receiving the image) 50 times and be so weak that only 25 attention responses follow. Any decrement in illumination or visual efficiency during high-speed night driving could delay reaction enough to result in a serious accident.

"Modern windshields were made green because large areas of glass let in too much heat from the sun. A green filter cuts out the red and infrared rays which carry heat. For purposes of night driving this windshield color becomes the worst possible selection because automobile headlight is unbalanced. Almost two-thirds of headlight energy is concentrated in the red end of the spectrum, and only one-third is in the range to which a green windshield is most transparent."

Tinted glass becomes even more dangerous at night when headlights are turned down or when the intensity is diminished by mud or mechanical defect, he stated. In addition, even the slightest tinted glass adds to the night visual problems of color-blind persons.

Dr. Miles pointed out that tests have shown that visual acuity is markedly

decreased by the use of tinted glass for night driving. Normal vision is 20/20. During night driving visual acuity is 20/32 through colorless glass, 20/34 through light yellow glass, 20/40 through pink glass, 20/46 through green windshield glass, and 26/60 through the combination of pink glasses and a green windshield.

"Even more damning is the effect of tinted glass on resolving power during night driving," he stated. "A pair of objects which would appear separate at 100 feet through a clear windshield, would appear single through a green windshield until the distance had decreased to 25 feet.

"Green windshield glass should be in a separate layer, to be moved aside for night driving. Persons with defective vision, including color blindness of the common type, should be advised to add auxiliary headlights to their automobiles and to avoid any type of tinted glass for night driving."

Dr. Miles is associated with the department of ophthalmology and the Oscar Johnson Institute of the Washington University School of Medicine.

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## STUDY OF RELATIONSHIP OF NOISE TO HEALTH URGED

Study of the relationship of noise to health, especially in industry, and an interpretation of the findings so that management in industry and the public can understand them, is needed, it was stated editorially in the Journal of the American Medical Association.

Most normal persons have a wide adaptability to noise and once adaptation to a given noise level is achieved, energy is not expended by those working in such an environment at a rate significantly greater than normal, the editorial pointed out, adding:

"There are many reports claiming that noise adversely affects public health, but the possible relationship between noise and health needs further study. In view of the problems related to modern industry such study is now in order."

DR. SYDENHAM B. ALEXANDER,  
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Influenza	Typhus Fever	Whooping Cough
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First Four Months	Guiding the Adolescent

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# THE Health Bulletin



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## ACCIDENTS AS A HEALTH PROBLEM IN NORTH CAROLINA

By CHARLES M. CAMERON JR., M.D., M.P.H.

Chief, Accident Prevention Section

N. C. State Board of Health

A widely circulated standard American dictionary has defined an accident as "an event that takes place without one's foresight or expectation," however, experience has alerted health workers to expect accidents to cause over 2400 deaths in North Carolina each year and to cause an estimated 240,000 persons to be permanently or temporarily disabled.

While the accident to the individual may be classed as an unexpected event, the accident toll in the community may be predicted with alarming accuracy in terms of deaths, disability and economic loss. Numerically, accidents are ranked as the fourth leading cause of death in North Carolina and since accidents claim their victims at an earlier age than heart disease and cancer, it is now considered by many as the most important cause of death from the standpoint of economic loss to the state.

Credit for creating awareness to the accident problem must go to those active in the field of occupational health for it was in this area that the first steps were taken into the research, study, and action in making the individual safety conscious.

With the advance of the motor vehicle, much attention has been directed toward accidents related to transpor-

tation and many agencies are now engaged in full-time activities designed to reduce the number of lives lost on America's highways. Until the past few years, little effort has been expended toward the prevention of the accident in the home and on the farm, an equally serious health problem which was recognized by a few far-sighted public health workers as early as 20 to 30 years ago.

In North Carolina in 1952, all accidents caused 2,492 deaths. Of this number, 1,168 were associated with some type of motor vehicle accident and 168 were caused by some other form of transport vehicle. A total of 1,158 accidents were classed as non-transport accidents. Of this latter number, the largest single group, 618 fatal accidents, occurred in the homes or farms of the state. The remaining 540 deaths were caused by accidents in public parks, playgrounds, fields and woods and other areas outside the home.

Official records are available only on fatal accidents, but the National Safety Council, using figures obtained from large scale household surveys, estimates that for each fatal accident there are from 100 to 150 non-fatal accidents which result in disability for at least 24-hours. It is also estimated that for each fatality, there will occur

four accidents which result in permanent disability of some type.

Using the number of fatal home accidents only as a base, then it becomes obvious that there were 60,000 home accidents in North Carolina which disabled for at least 24-hours and that North Carolinians were disabled permanently at the rate of 2400 per year from home accidents in 1952.

Two other figures are available which may help define the accident problem in North Carolina. The North Carolina Blind Commission has estimated that about 19 per cent of their clients are blinded due to accidents. The Vocational Rehabilitation Division of the Department of Public Instruction has stated that accidents are the largest single cause for referral to their agency, accounting for 25 per cent of all injuries in which rehabilitative services are rendered.

Due to the large number of organizations—both public and private—who are active in the health field, many of whom mobilize tremendous public relations programs to obtain public support, it is difficult at times to obtain an unbiased accounting of the seriousness of any given condition as a health problem. One should be aware that home accidents in North Carolina in 1952 caused more deaths than did poliomyelitis, tuberculosis, diphtheria, and the other major communicable diseases combined.

The home accident is the only single cause of death which ranks among the leading seven causes of death for all age groups. It is a leading cause of death during the period from birth through young adulthood and while the home accident ranks as a lesser cause of death in the older age groups, the actual numbers of accidental deaths remain large, but become only relatively less important as the incidence degenerative diseases increases with advancing years.

During the past two years, the local health departments in the state have cooperated with the N. C. State Board of Health in the collection of epidemiological data related to fatal home

accidents. Health department staff members have conducted on-the-spot investigations into the circumstances surrounding home accidents which terminate fatally. This data is now being subjected to statistical analysis and certain preliminary information has been developed.

The North Carolina studies have revealed that accidents are the greatest threat to the very young and the very old with 20 per cent of non-motor vehicle accidents occurring to persons under five years of age and 20 per cent to persons over 65 years of age.

Falls, of all types both on the level floor or ground, and from one level to another as in the case of steps, porches, and ladders, were the single most important type of home accidents. Falls caused 278 deaths in the home in 1952. Over 60 per cent of fall victims were over 65-years of age.

Fires, explosions, and conflagrations were the second most frequent type of home accident, causing 202 deaths. About 40% of individuals killed by fire in the home were under 10 years of age and an additional 17 per cent were over 65 years of age.

Accidents with firearms caused 65 deaths in 1952 and about 20% of these deaths were in children under 10-years of age. The "unloaded gun" remains a serious menace in many North Carolina homes. Poisons, both liquid and solid, ranked as another important cause of death in the home, accounting for 41 deaths, over 50 per cent of which occurred in children under 5 years of age.

If accidents are classed as "motor vehicle" and non-motor vehicle," one finds 1292 accidents in the latter category in this state in 1952. A total of 903 of these accidents happened to men while the weaker sex accounted for 339 accidental deaths. The accident experience is higher for men in every age group except the years above 65-years when more females were killed than males. The calculation of age-specific death rates which will be included in the final tabulation of the 1952 data may show this differ-

ence is not a true one.

Additional information relating to the accident problem is now being developed and it is planned to make this information available to interested groups and individuals in the state as the accident studies continue.

It is obvious that accident's represent one of the most serious health problems facing the state today. From the close relationship which public health departments enjoy with the individual and his home environment, it seems obvious that the prevention of home accidents warrants the specific attention of the State Board of Health and the local health departments in North Carolina. Important in this connection is the fact that public health workers are trained in the fundamentals of disease prevention and should be able to adapt these principles to accident prevention.

The prevention of home accidents has been categorized by public health specialists as essentially a local health department activity. The State Board of Health can offer consultation and assistance in planning an accident pre-

vention program, but the actual work must be carried out at the local level. No one professional group in a health department can be designated as solely responsible for the accident control activities. This activity must be regarded as a public health problem requiring the efforts and cooperation of every staff member. Such a program to succeed must embrace the medical, nursing, sanitation, statistical, educational, and other health department personnel.

The U. S. Public Health Service, a health agency which has been active in the field of accident prevention for the past several years, has defined the immediate objectives of health department workers as the elimination from the home, so far as possible, those conditions which cause accidents, and the training of people to act in a safe manner within the home environment. The very nature of the health department's work with all ages and all groups makes each staff member a potentially potent force in the prevention of home accidents.

## WHAT TO DO DURING MENTAL HEALTH WEEK

By EDWARD S. HASWELL

Chief, Mental Health Section

State Board of Health, Raleigh, N. C.

Take a good look at your calendar. Have you marked off the first week of May—May 2-7? If not, do so—in red too. For that is an important week for you—the most important, I think. It is MENTAL HEALTH WEEK.

You may disagree with me about this. You say, "Why should I be bothered about MENTAL HEALTH WEEK? There's nothing wrong with my mind." And, no doubt, you are right.

Probably you are physically healthy too. But does that mean you will always stay that way? No necessarily. For you know that you can still get many different sicknesses and ailments.

Because of that, even though you do enjoy good physical health, you are concerned about it.

Probably you do everything possible to keep healthy. You eat the right food, drink pasteurized milk, get fresh air, a certain amount of sleep, brush your teeth, and, of course, you don't eat spoiled food or drink impure water. And if you do have an ache, a pain, or a fever, you go to your doctor.

Well, that's the way it is with your mental health. Just because you have good mental health, doesn't mean you will always have it. For you can get all kinds of mental and emotional

sicknesses, the same as you can get different physical ailments. So you see, you should be concerned about your mental health.

But, keeping mentally healthy, is not altogether easy. For one thing, few communities have mental health specialists to suggest ways of staying mentally healthy; few communities have mental health specialists who can help you regain your mental health if you should begin to lose it. For frankly, when it comes to North Carolina, it just does not have enough mental health specialists or facilities to give you and your children and relatives the best possible help when it comes to mental health.

Yet, North Carolina does not have to continue to go without these facilities. You can do something about changing this situation. So can your relatives, your friends, your neighbors. As a matter of fact that is why **MENTAL HEALTH WEEK** should be especially important to you. It gives you a chance to do something about North Carolina's inadequate Mental Health facilities.

**FOR MENTAL HEALTH WEEK** is not just a time for reading articles or listening to radio programs and speeches about Mental Health. It is also a time for you to ask some searching questions about your community's mental health facilities. For instance, you might ask, "Could my community give help to someone like Jim?"

Frankly, Jim is no one in particular. He could be your doctor's, or minister's, or teacher's, or neighbor's boy. He could be yours. For Jim is everywhere—in every community. There are thousands of Jims.

Probably he attends your local school, though he isn't too happy about it. No doubt, he plays hooky—probably started truanting when he was nine or ten years old. He's been in all kinds of mischief too—stole a bicycle and broke into a store. In so many words, Jim is a delinquent.

That means something must be wrong with him—he must be malad-

justed somehow. He needs help—special kind of help if he is ever to lead a law abiding well-adjusted life.

What kind of help will he get from your community? Will it be the reprimands of a punitive cop, the inside of a crowded jail, the tongue lashing of a tough-minded judge, the supervision of an untrained probation officer, or confinement to an ill-equipped training school? Or will it be the help of a friendly policeman and an understanding juvenile court judge, of a comfortable, well-equipped juvenile detention home, of a well-trained probation officer, of first rate recreational facilities, of a vocational school?

Well, what is the answer? If the latter, then your community is, indeed, fortunate. It is providing more help to the delinquent than most communities. More likely, your community is like the former. It just does not have anywhere near adequate facilities for the delinquent.

But you don't have to let your community keep on neglecting the delinquent. You can do something about it—can begin doing something about it during **MENTAL HEALTH WEEK**. Get together with your Health Officer, and Welfare Superintendent, and Superintendent of Education, and your ministers and doctors—form a year round committee and begin planning how you can improve your community's facilities for delinquent children like Jim.

Facilities for Jim, of course, won't necessarily mean help for someone like Mary. As with Jim, she is no one in particular. She could be a boy as well as a girl, could be your neighbor's child or yours. The country has thousands of Marys—North Carolina about 30,000. Mary is a mentally retarded child.

She goes to your neighborhood school and, like Jim, is unhappy. But she doesn't get into mischief—doesn't become a delinquent. She just feels out of place in and out of school—perhaps with her family too. No matter how hard she tries, she just can't learn. Being a slow learner she needs spe-



cial help.

Can your community give someone like Mary this special help? You know the answer. A few communities have special teachers for children like Mary, a few have the services of a clinical psychologist. Yet no community has adequate help for the mentally retarded child.

Then why not start doing something about this situation during MENTAL HEALTH WEEK? Find out how many mentally retarded children attend the schools in your community. Ideally this can be done by a psychologist giving a psychological test to each child but, practically speaking, this is impossible. Still, a good idea of the number of mentally retarded children can be determined by the use of group psychological tests, or even by the estimate of teachers. At any rate, get as accurate a picture as is practically possible of the number of mentally retarded children in your community.

After this, a committee should be appointed to study the results of the survey. For remember mental deficiency does not consist of one problem but of many. That's because there are many kinds of mentally defective children, each with his own special needs. So a study is necessary to determine the different kinds of retardation, the different kinds of problems, and the various needs which must be met.

Such a study will show that there is no one answer to the mental deficiency problem in your community. For instance, the appointment of a clinical psychologist, a special education teacher, the establishment of a vocational school, won't be the answer, only part of the answer. The only near answer will be a well-planned, well-organized community-wide mental deficiency program. This program would include many different professions as well as many services.

So, on the basis of its study, your community committee should plan a program that will meet the community's mental deficiency problem. Not that the program will be realized immediately. Hardly that. Any worth-

while program will be too expensive to put into effect in one or even two years. It will simply give you a goal which hopefully you might reach in five or even ten years.

So have your community committee plan a program, and then let it decide how it will start working toward its attainment. That might mean the appointment of special education teachers, or a clinical psychologist, or the establishment of a vocational special school. How you start the program will depend on the most pressing need, on the money and personnel available, and other factors. But however you start, your community will understand it is not the total program, the whole answer, but only a beginning of the program, a part of the answer.

Such services will help children like Mary, but not mentally and emotionally upset people like Bill, a child, or Mr. Jackson, an adult. They need the help of a good mental health clinic. Yet, I can tell you this—without your even having to take a look at your community—that no community in the state has adequate mental health clinic services.

Not that there aren't some mental health clinics in the state. There are—six in all. But all are located in the populous areas—Asheville, Charlotte, Durham, Greensboro, Raleigh, and Winston-Salem. No clinic exists east of Raleigh, none are in the rural areas.

Even the existing mental health clinics are inadequate for their communities. Only one is fully staffed; all others understaffed. And each one tries to do the job of seven. For according to the recommendations of the United States Public Health Service, there should be 1 clinic to 100,000 people, whereas North Carolina has 1 to about 700,000.

If North Carolina were to meet the standards of the United States Public Health Service, it would have to have 42 clinics. That goal would be impossible at the present time, for it would be impossible to find the people to staff them. Still the Mental Health Section has plans for giving all com-

munities more adequate clinic service.

The Mental Health Section is recommending the establishment of ten regional mental health centers in North Carolina. Each would have a minimum staff of one full-time psychiatrist, one clinical psychologist, two psychiatric social workers, and two secretaries—though some might require even a larger staff. As planned, these centers would be located in Asheville, Charlotte, Durham, Elizabeth City, Fayetteville, Greensboro, Greenville, Raleigh, Wilmington, and Winston-Salem.

These centers would provide diagnostic and treatment service to mentally and emotionally sick people. They would also give consultation service to doctors, ministers, social workers, nurses, teachers, and others, would participate in community mental health education, and hopefully, would do some research work. Seven of these centers would offer professional people in the area an opportunity for practical experience in mental health. For instance, a social worker of a welfare department or a public health nurse could spend two or three months at the center under the supervision of its staff. The other three mental health centers would be used as actual training centers for needed mental health personnel, such as, psychiatrists, clinical psychologists, psychiatric social workers, and mental health nurses. Because of their geographic locations, these three centers would probably be located in Durham, Raleigh, and Winston-Salem.

Of course, these ten regional mental health centers would still be handicapped in providing service to the surrounding rural counties. This would be partly remedied by the employment of psychiatric social workers who would be stationed in one or more of the counties surrounding the center. They would give consultation service to professional people in their community, would participate in mental health education programs, would act as intake worker for the regional mental health center, and would treat certain selected

cases. These psychiatric social workers would be under the supervision of the staff of the regional mental health center.

Well, this is the plan of the Mental Health Section though so far it remains only an idea for one reason. The Mental Health Section ~~doesn't~~ have the money to put it into operation.

Yet the program would not be costly. The total cost would be from \$500,000 - \$600,00—only two-thirds of that coming from the state. Maybe that seems like a lot. If so, compare that with more than \$11,000,000 per year for the care of mental patients and mentally defective in the hospitals.

Next year the Mental Health Section is asking for appropriations so it can establish these 10 Mental Health Centers. But it is not asking for the \$500,000 or \$600,000. It won't need that next year or for two years. It will take time to find personnel to put these centers into operation. All it wants for the two fiscal years 1955-1957 is enough to start working toward the goal of ten mental health centers. As a matter of fact it is requesting \$380,000 for the two years. This would give \$190,000 each year—enough to strengthen the present mental health centers for training of mental Health Specialists, enough to set up one new center and start another, and enough to offer stipends for training mental health specials in the schools.

You, during and after MENTAL HEALTH WEEK, can help the Mental Health Section obtain this \$380,000. You can help by joining your local Mental Hygiene Society which is an organization that gives, among other things, support for needed mental health funds. Or if your community has no Mental Hygiene Society you might help to organize one which could ask for an appropriation of \$380,000. And if this is impossible? Just be sure you give your support for this appropriation—ask your friends and neighbors to give theirs.

## NOTES AND COMMENT

By THE EDITOR

### ACCIDENTS

Addressing the 52nd annual conference of the State and Territorial Health Officers in Washington in November 1953, Dr. Leonard A. Scheele, Surgeon General of the Public Health Service cited home accident prevention activities by state and local health departments as progress in one of the "newest" fields of public health.

That North Carolina is one of eight states in the United States now formulating accident prevention activities in the state department of public health under a special grant from the W. K. Kellogg Foundation it has been announced by Dr. J. W. Roy Norton, North Carolina State Health Officer.

Dr. Norton pointed out that accidents are the fourth leading cause of death in North Carolina and that home accidents alone cause more deaths annually than do poliomyelitis, diphtheria, typhoid, whooping cough, measles and other acute communicable diseases combined.

In 1952, accidents led to 2,500 deaths in North Carolina, only one-half of which were caused by motor-vehicle accidents. Using the National Safety Council estimates for non-fatal injuries, over 120,000 North Carolinians were disabled for at least twenty-four hours by non-motor vehicle accidents alone, and almost 5000 persons were permanently disabled by the same type of accidents.

Dr. Norton revealed that the Accident Prevention Section has been established in the Division of Epidemiology of the State Board of Health. Dr. Fred T. Foard is Director of that division.

The section will be under the direction of Dr. Charles M. Cameron, Jr., an epidemiologist who also serves as Chief of the Communicable Disease Control Section.

Dr. Cameron, a former Public Health Service officer, is a graduate of Vander-

bilt School of Medicine. He received public health training at the University of North Carolina School of Public Health and the Harvard School of Public Health. Prior to entering the Public Health Service, he was employed as a district health officer by the Tennessee Department of Public Health.

The section staff will include three other professional workers representing the respective disciplines of public health.

Miss Agnes Campbell, formerly of Statesville, who has been active in both hospital and public health nursing for the past twelve years has been named as consulting public health nurse in accident prevention. She was graduated from the University of Pennsylvania Hospital, School of Nursing and received her public health training at Vanderbilt University.

Mr. Edgar Seagle, a native of Lincolnton, North Carolina, has been selected to serve as consultant sanitarian with the section. Mr. Seagle has served as a sanitarian and industrial hygienist with the City of Charlotte Health Department and has completed graduate studies in the field of public health at the University of North Carolina School of Public Health.

Miss Nettie Day, a native of Oxford, North Carolina will serve as health educator on the state accident prevention staff. Miss Day comes to Raleigh from the Rockingham-Caswell District Health Department in Spray, North Carolina where she has been employed as health educator for the past five years. She obtained her graduate degree in public health from the University of North Carolina School of Public Health.

Dr. Cameron, Section Chief, revealed that the section will be active in working with other state level organizations with interests in the field of accident prevention and safety and will develop statistical studies and other materials

relating to home and farm accidents in North Carolina, as well as assisting local health departments in planning and carrying out accident prevention activities.

\* \* \* \*

#### REPORT MADE ON GAMMA GLOBULIN

WASHINGTON, Feb. 22 — (AP)—A committee of infantile paralysis experts reported today they could find no evidence that the first wide-scale use of gamma globulin last summer had any effect in preventing or mitigating paralytic polio—but they granted that on one score their finding was open to further study.

The U. S. Public Health Service announced that a special 20-member committee, which had been asked by the health service to evaluate the effectiveness of "G.G." as used last summer, "has reported that beneficial effects were not demonstrated" either in the mass inoculation of children in epidemic areas or in the inoculation of family and other close contacts of people already sick with polio.

The committee, including some of the nation's foremost researchers on polio, examined data procured among the approximately 185,000 children receiving "G.G." in "mass" inspection programs in 23 epidemic areas in 13 states, and among some of those people who received it because they were household or other close contacts of the approximately 40,000 persons stricken with polio during last year's outbreak.

Those two systems of using the material were followed under a procedure in which the blood derivative—in scarce supply at that, at least—was rigidly rationed under an allocation system controlled by the U. S. Office of Defense Mobilization. Distribution was the responsibility of the Public Health Service, and use of the material was supervised by state and local health officers.

Last summer's first large-scale use of the material against polio was undertaken after Dr. William McD. Hammon of the University of Pittsburgh, and a group of associates had reported

that field tests in Utah, Texas and Iowa indicated that gamma globulin offered "marked protection" against paralytic polio, although on a temporary basis. Their research was supported by the National Foundation for Infantile Paralysis. Dr. Hammon was also one of the committee which evaluated the use of "G.G." in last summer's outbreak.

While declaring that the committee of experts reported it had found no evidence of beneficial effect from the use of "G.G." either in mass inoculation programs or in the inoculation of family contacts of polio cases, the health service's announcement gave this qualification:

"Observation of the 23 communities in which mass inoculation of children was carried out did not provide enough information to permit the committee to conclude whether or not gamma globulin had an effect in preventing or alleviating the disease when used in this way, the committee said.

"Among the cities where gamma globulin was administered on a mass basis to all children last summer, the committee's report said that in most of them the inoculations were given after the peak of the epidemic had been passed, so there was little chance to demonstrate an effect of gamma globulin in modifying the epidemic."

The health service, asserting that the special committee had made its report after a three-day meeting held recently in Atlanta, Ga., declared:

"The committee expressed the opinion that demonstration of the efficacy of gamma globulin under the conditions pertaining to mass inoculations would require larger experience with greater opportunity for scientific observation."

But the health service's statement added:

"The committee did find, however, that the 'family contact' use of gamma globulin, where members of the household of a polio case were inoculated as soon as the illness was recognized, did not measureably reduce the number of subsequent paralytic cases in these households.

"Moreover, the committee said their study of the family contact use indicated that when gamma globulin was administered to exposed persons before they came down with paralytic polio, there was no measureable effect on the severity of the ensuing paralysis."

The health service said the 20-member committee had "studied medical data from all parts of the country which had been collected and analyzed since the end of last year's polio season" by the staff of the health service's Communicable Disease Center (CDC) at Atlanta.

The evaluation program was sponsored by the health service in collaboration with the Association of State and Territorial Health Officers, the American Physical Therapy Assn. and the D. T. Watson School of Physiatics, which is affiliated with the University of Pittsburgh School of Medicine.

Dr. Alexander Langmuir, chief epidemiologist of CDC, was chairman of the committee which included the following non-governmental representatives:

Miss Lucy Blair, consultant, professional services, American Physical Therapy Assn., New York.

Dr. Roy F. Feemster, director, division of communicable diseases, Massachusetts Department of Public Health, Boston.

Dr. Thomas Francis Jr., professor of epidemiology, University of Michigan School of Public Health, Ann Arbor.

Dr. D. G. Gill, state health officer, Alabama Department of Public Health, Montgomery.

Dr. A. L. Gray, director of preventable disease control, Mississippi State Board of Health, Jackson.

Dr. William Hammon, professor of epidemiology, University of Pittsburgh School of Public Health.

Dr. Robert F. Korns, director, bureau of epidemiology and communicable disease control, New York Department of Health, Albany.

Dr. John R. Paul, professor of preventive medicine, Yale University School of Medicine, New Haven.

Dr. John D. Porterfield, director of

health, Ohio Department of Health, Columbus.

Dr. Albert B. Sabin, director, children's Hospital Research Foundation, Cincinnati.

Dr. Leonard M. Schuman, deputy director for division of preventive medicine, Illinois Department of Public Health, Springfield.

Dr. Thomas F. Sellers, state health officer, Georgia Department of Public Health, Atlanta.

Dr. Jessie Wright, medical director, D. T. Watson School of Physiatics, Pittsburgh.

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## DO YOU WANT TO BE A DOCTOR?

Whatever the trials and tribulations of a career in medicine, it seems we'll always have doctors.

This reassuring prospect for the future health of the nation is borne out by the spontaneous response received by a leading insurance company to an advertisement it ran recently in national magazines.

The double-page ad, entitled "Should Your Child Be A Doctor?" and written by Dr. Walter C. Alvarez, emeritus consultant in medicine at the Mayo Clinic, appeared in Collier's, Ladies' Home Journal and the Saturday Evening Post. It is one of a series which the company is running on choosing a career.

Hundreds of letters poured into the company from all parts of the country written by parents, students, educators at the high school and college level and distinguished practitioners. The letters, praising the advertisement and the public service it performs, contained so many requests for reprints that the company has made it available in booklet form.

Typical of the letters was one from a young girl in Nevada whose ambition is "to become a child specialist," a pre-med student at Texas A & M heard about the ad and wanted a copy; a mother of two children, aged 6 and 8½, wanted it to file away for the children to read when the time comes;

the principal of a secondary school in New York asked for copies to give to the students as guidance material.

The assistant dean of a Missouri university wrote: "Those of us who are professionally interested and concerned with the counselling of pre-medical students and their parents are deeply grateful for the recent New York Life advertisement. Could you send as 25 reprints?"

Some colleges have requested permission from the insurance company to enclose the booklet with the catalogue they send to prospective students, and the State University of Iowa and the University of Toronto are Distributing it to high schools.

An interesting use of the advertisement came out in a request for additional copies from the director of admissions for the School of Medicine of a southern university. The writer pointed out that Dr. Alvarez had warned against forcing a child into a medical career. He wanted to use this warning as ammunition in interviews with fathers of prospective medical students who were exerting the same kind of pressure on their sons.

Copies of the booklet can be obtained without charge or obligation by sending a postcard to the Public Relations Department, New York Life Insurance Company, 51 Madison Avenue, New York 10, New York.

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#### **URGENT PARENTS TO TEACH BASIC FIRE SAFETY RULES**

Keeping the home fires burning and keeping from being burned in home fires are two entirely different things.

To prevent unnecessary injuries and deaths from home fires, parents should teach their children the elementary facts of fire safety, Dr. Carl J. Potthoff, Rochester, Minn., wrote in *Today's Health* magazine, published by the American Medical Association.

"After the Christmas upswing in the incidence of home fires, there usually is a moderate decrease for several weeks, and then a rise again in February and early March," he stated. "There is no practical way

to fireproof a home completely; the term 'fireproof' when applied to dwellings of any sort is a misnomer. Even in homes of the safety-conscious where education within the family, good housekeeping, construction and repairs are aimed to prevent fires, some hazard exists.

"Accordingly, homemakers should work out plans with the children for use if fire strikes. Education should be judiciously factual according to the age of the child, lest children develop a haunting fear of home fires, particularly night fires."

According to Dr. Potthoff, parents should stress:

1. That escape from the burning building, not the saving of property, is the paramount objective.
2. How to notify the fire department and how to use fire extinguishers.
3. That if clothing catches fire, either in a home fire or otherwise, it usually is advisable to lie down and to roll over slowly, as flame and heat rise to the face. Wrapping a blanket about the body may be worth-while; running tends to fan the flames.

Dr. Potthoff stated that children also should be taught that when escaping from a fire the following rules should be observed:

1. Keep low in a fire-swept room as the risk from heat, smoke and carbon monoxide is less.
2. Don't open doors and windows because drafts cause a faster spread of fire.
3. Doors should be opened cautiously while standing behind them, as the next room may contain superheated air, a blast of which may be lethal.
4. The important body parts—face, hands, scalp—can be protected somewhat by a heavy towel or article of clothing, preferably wet, while dashing through flame.
5. Jumping from upper stories often is fatal and often unnecessary as rescue may be at hand.
6. When doors and transoms are closed, open a window slightly and stay near it, breathing the incoming air.

7. Don't re-enter a burning building to try to rescue a toy or pet.

\* \* \* \*

### **CARDIOVASCULAR DISEASES IN WOMEN MAY NOT BE INFLUENCED BY OBESITY**

The development of high blood pressure and coronary diseases in women may not be influenced by obesity as it is in men, a study of 1,000 persons by three New York heart specialists disclosed.

The reason for this possible difference between the sexes is not obvious, the doctors wrote in the *Journal of the American Medical Association*.

"It is apparent that hypertension is found more commonly in obese men than in those who are of average weight or who are underweight, but the exact relationship between hypertension and obesity remains obscure," the doctors pointed out. "There is no definite evidence that the obesity is causally related to hypertension. It may be that the factors resulting in hypertension also produce obesity, e.g., emotional influences, faulty metabolism or a hormone disturbance.

"It is questionable that obesity is ever the sole factor in the development of hypertension, for it is quite common to find a normal blood pressure in the presence of excessive obesity. There is no doubt, however, that overweight is detrimental when the blood pressure is already elevated and that improvement usually follows a loss of weight."

The doctors' study disclosed that the percentage of overweight male patients suffering from coronary occlusion, angina pectoris, coronary insufficiency and hypertension was significantly higher than the percentage of overweight men in the general population, which was used as a control group for comparative purposes.

Among the overweight women studied, there was little difference in the frequency of cardiac conditions or high blood pressure between the patients and the controls, the doctors stated. In fact, in the group suffering from angina pectoris, the proportion

of obese women with the disease was even less than in the control group.

Discussing the relationship of obesity to coronary disease, the doctors said that "in patients who are overweight, the mortality rate is twice that of average or underweight patients." Obesity increases the basic work of the heart and thus places a strain on it.

"In cardiac disease, obesity predisposes the patient to anginal pain and congestive failures," according to the doctors. "It has been shown that obesity increases oxygen consumption, cardiac rate, blood pressure and cardiac work. It reduces work tolerance, cardiac reserve, and vital capacity after exercise.

"Conversely, loss of weight is usually very beneficial to obese patients with cardiac disease; their cardiac reserve is increased and their symptoms may disappear for long periods. It is significant that we found a low incidence of overweight among patients who had made a long-lasting, complete functional recovery from coronary occlusion and insufficiency. In these patients, the avoidance of overweight probably was a factor in the complete functional recovery from severe acute episodes of coronary disease.

"Although obesity occurs more commonly in patients with hypertension or coronary disease, no definite conclusion concerning the etiological relationship between obesity and these diseases can be drawn. The reports in the literature and our own observations, however, clearly indicate the importance of avoiding obesity in cardiovascular disease."

The report was made by Drs. Arthur M. Master, Harry L. Jaffe and Kenneth Chesky, all of whom are associated with the cardiographic department, Mount Sinai Hospital, New York.

\* \* \* \*

### **IT ISN'T SECOND CHILDHOOD— IT'S THE EFFECTS OF AGING ARTERIES**

It isn't second childhood that oldsters go through—it's the effects of aging arteries.

But, one shouldn't let these effects

distract one from the charm and wisdom underneath, according to Dr. John E. Eichenlaub, Urbana, Ill. A real understanding of the problem of why old people act differently helps one to enjoy the oldsters' company more, to keep feelings from being hurt, and to make oldsters happier and more content.

"You can't understand old people without understanding the changes in mind and personality that go with extreme age," Dr. Eichenlaub wrote in Today's Health magazine, published by the American Medical Association. "These changes don't always happen the same way or at the same age.

"A person is as old as his arteries, not as old as his years. Since the arteries that supply different parts of the brain wear out at different times and to different extents in different people, every person has his own way of showing age. But some changes almost always take place, and anyone who is really old, instead of in a sort of advanced middle age, is likely to have them."

The first of these changes, according to Dr. Eichenlaub, is loss of memory, or rather loss of ability to make new permanent brain records from which memories can be drawn. The power to recall recent happenings diminishes, but old memories are not wiped away. The absence of new memories makes incidents from the distant past stand out more sharply and come to mind more easily than at any younger age.

Aging of the brain also causes the dampers that enforce moderation on normal adult emotion to gradually become less effective, he pointed out. This process is different from simple loss of inhibitions—all emotional reactions, not merely those of which a person might be ashamed, become faster and stronger.

"The aging brain causes one other type of trouble," Dr. Eichenlaub stated. "The brain has the job of gathering information from all parts of the body and relaying orders to all the body's muscles. The weakening of tiny areas of brain tissue with loss of circulation

throws these functions slightly out of kilter.

"If the information-gathering areas are damaged, the victim complains of peculiar or painful sensations. Little areas of numbness, neuralgia and crawling sensations are quite common. If the muscle-controlling centers are involved, trembling and sometimes stiffness or slight clumsiness may appear."

However, the aging mind is not really a childish mind, Dr. Eichenlaub stressed, stating:

"From the wealth of experience and the gathered richness of a hundred friendships, the aging mind draws wisdom and charm. From fully tested conviction and fully explored avenues of thought, the aging mind draws faith and keenness. These glories are not lessened or impaired by the defects of age.

"Arteries harden and the brain cells they supply with nourishment die or fail to function, and problems inevitably result. But those problems do not cancel the old person's virtues and advantages—they are side issues, extra annoyances, unwarranted burdens.

"The problems of the aging brain deserve to be understood, and the burdens they impose deserve to be lightened."

\* \* \* \*

## MEDICINE'S OUTLOOK FOR 1954 GIVEN BY A.M.A. PRESIDENT

A year of greater scientific achievement and continued improvement in medical care was predicted for 1954 by Dr. Edward J. McCormick, Toledo, president of the American Medical Association.

Research workers in our great universities and laboratories have labored untiringly to master nature and harness its laws for the benefit of all mankind, Dr. McCormick stated. By pooling their physical, chemical and biological knowledge and know-how during 1953, they have removed a few more dark continents of ignorance along the advancing fronts of medical science.

These research teams, dedicated to the preservation of life in the fight against such diseases as cancer, in-



fantile paralysis and heart disease, have recent contributions that are truly great triumphs in the conquest of disease.

Members of the medical profession will do everything possible to bring to every household the benefits of these scientific advancements, Dr. McCormick promised.

Dr. McCormick urged the nation's physicians to adopt the following program for the coming year:

1. To continue to bring the best medical service possible to ALL of the people in the United States.

2. To make available full medical service to all rural areas and to alleviate the problem of physician distribution.

\* \* \* \*

3. To solve the problem of indigent medical care and chronic illness through the efforts of the medical profession, as this is not a function of the federal government.

4. To become an integral part of the community and to engage in all civic activities and other non-medical enterprises that will accrue to the benefit of the community.

5. To re-read the Oath of Hippocrates and the Principles of Medical Ethics of the American Medical Association.

Dr. McCormick ended his message by stating that so long as doctors continue to carry on their practices "in accordance with fundamental moral principles, the problems of the profession which sometimes seem insurmountable will be solved in a relatively short time."

\* \* \* \*

#### **ADULT UNDERSTANDING OF CHILD ACCIDENT PROBLEMS NECESSARY**

It's the adult's job to prevent childhood accidents.

As children do not always conform to the practices that would insure their greatest safety, adults must be made to understand the accident problem of children and must be as concerned about it as they are about childhood diseases, it was stated editorially in the *Journal of the Ameri-*

can Medical Association.

"A notable decrease in infant mortality and in the death rate from childhood diseases has been brought about by the nation's physicians during the last half century," the editorial pointed out. "However, despite the efforts put forth by the medical profession to protect the country's future citizens, childhood mortality continues high because of accidents—accidents that, for the most part, are preventable.

"The accident death rate among children is being reduced only about one-third as fast as the rate for death by disease. Preventable accidents are the leading causes of death in the age group of 1 to 14 years, killing more children than the combined mortality of the next six causes of death—pneumonia, congenital defects, cancer, tuberculosis, leukemia, and heart disease—and killing many, many more children than poliomyelitis."

Only by the understanding and cooperation of adults can the toll of childhood death disability due to preventable accidents be cut, the editorial stressed. It urged physicians to take the initiative to instruct parents and school personnel, specifically, and the entire community, generally, in childhood safety problems.

Recent reports indicate that the 1949 death rate of children under one year of age was 72.1 per 100,000, according to the editorial. Home accidents of various kinds accounted for infant deaths at the rate of 43 per 100,000. The largest single cause of accidental death in infancy was the inhalation or ingestion of objects; fire, explosions and burns, and motor vehicle accidents followed. Children one to four years of age died from accidents at the rate of 37.8 per 100,000, with motor vehicle accidents, fires, explosions and burns, and drownings as the leading causes.

In 1952, the editorial stated, accidental deaths among children 5 to 14 years of age totaled approximately 6,100. Of these deaths, 2,450 were classed as due to motor vehicles, 1,150 occurred in the home, 2,300 were class-

ed as public non-motor vehicle accidents, and 200 were classed as occupational.

In addition, thousands of school-age children are injured sufficiently each year to require the attention of a doctor or to cause absence from school of one-half day or more, the editorial pointed out. Injuries occurring in school buildings account for 26 per cent of such cases, on school grounds for 29 per cent, going to and from school for 5 per cent, at home for 17 per cent, and in other places, chiefly public, for 23 per cent.

In school buildings, about one-third of the injuries occur in gymnasiums; classrooms are next, with vocational shops, stairways and corridors following. On school grounds, injuries occur somewhat more frequently during organized activities than during unorganized ones. In organized activities, they happen most frequently in football and baseball; in unorganized activities, they occur most frequently in falls and running accidents. Going to and from school, the principal source of injury is motor-vehicle accidents.

"Children deserve the chance to grow up—it is up to every adult to give them that chance," the editorial concluded.

\* \* \* \*

#### A TALE OF A CITY— RICHLAND, WASHINGTON

Ten years ago there was no Richland, Washington.

The area on which this modern city was built in 1944 was a semiarid wasteland in southern Washington. Today, it is a thriving atomic-industry city of 24,000 people. Despite the potential hazards of the type of industry pursued, its annual death rate is one-half that of the average for the nation—2.2 per 1,000 population, compared to the national average of 4.4 annually for the same age distribution.

Many factors, one of which is a uniquely planned and integrated health and medical program, are responsible for this record, three Richland physicians wrote in the *Journal of the American Medical Association*.

The complete, integrated medical services that have been made available include public health, industrial medicine, adequate hospital facilities, general patient care, and voluntary health insurance.

Richland has no medical resources that are not available to the average community, the doctors claimed. The small investment needed for such a health program is within the reach of any American community. Its dividends, in addition to an economic saving of approximately \$750,000 annually, are great reductions in human suffering.

The public health services available to Richland citizens include vital statistics, communicable disease control, environmental sanitation, public health laboratory services, maternal, infant and child hygiene, health education, bedside nursing, school nursing, mosquito control and welfare services. The annual cost per family for such services, according to the doctors, is \$9.25, or three cents a day. Essentially, they added, there is no medical indigency in Richland.

A good industrial health program has been a tremendous influence on the general health of the community, the doctors pointed out. Its prime objectives are to prevent job-connected and personal illness and accidents and to promote physical and mental health of employees. Disease is detected in an earlier corrective state through preplacement and periodic examinations.

Assistance and advice on matters of personal hygiene, emotional disturbances and personal illness are given employees. The results are a decrease of about one-half the national average of absenteeism among employees, increased employee efficiency, and a decrease in turnover. The resultant savings of industry from these factors paid for the medical program, the doctors said.

A 106-bed hospital, which is the center of medical activities in the community, also has helped Richland to obtain its fine record, the doctors wrote.

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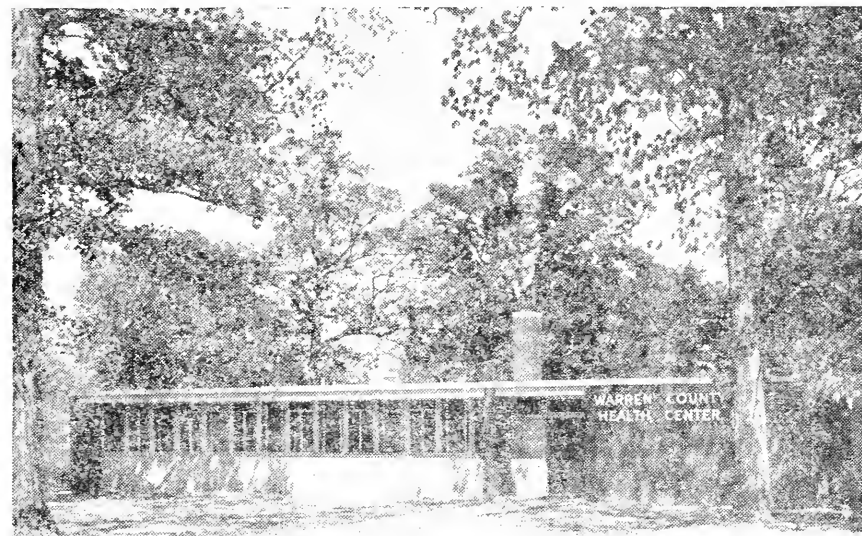
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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## RABIES CONTROL IN NORTH CAROLINA\*

By MARTIN P. HINES, D.V.M., M.P.H.\*\*

North Carolina State Board of Health

Raleigh, North Carolina

Perhaps the title of my discussion should be "The Beginning of a State-wide Rabies Control Program" since I have been working in the state for only two years. Progress has been slow and many times discouraging, but we now sincerely believe that our efforts are showing results.

### Organization and State Board Of Health Policy

In July 1951 the North Carolina State Board of Health established a Veterinary Public Health Section in the Division of Epidemiology to assist in the control of the many animal diseases transmissible to man. Because North Carolina ranked eleventh in the nation in 1951 for the number of positive cases of animal rabies (ranked twenty-first in 1952), it was decided that action must be taken to alleviate this serious public health problem. Our policy has been to visit and consult with the local health departments, when requested, in order to assist in the organization of adequate control programs. Rarely is a rabies program effective where the local health department does not have an active part.

I am often called upon by the local health departments to meet with groups interested in rabies control and to appear before county boards of health and county commissioners. At these meetings, I try my best to give pertinent facts about adequate programs, what other counties are doing and the mistakes they have made. I feel that it is my duty, as far as possible, to promote uniform programs and, above all, to stress the great benefits to all the citizens which in turn make the costs of such programs small.

Rabies Control in the United States is a national problem which calls for uniform, coordinated programs in the counties all over the states. It is not an easy task and is at times most discouraging. It can be accomplished only with strong programs at the grass roots in the county.

### History of Rabies and Human Antirabic Treatment

As long as 1800 years ago rabies was described as a clinical entity in animals, and it was guessed by Celsus that the onset of the disease in man was related to the bite of rabid animals. As far as the United States and the Western Hemisphere are concerned, there was no evidence of rabies prior to colonization by the white man. The

\*Presented before the Health Officers Section of The North Carolina Public Health Association Meeting at Nags Head, North Carolina, September 10, 11, 12, 1953.

\*\*Chief, Veterinary Public Health Section.

first descriptions of rabies in the British Colonies are found in the historical archives of Virginia. The disease was apparently present in 1753, and by 1785 it had appeared in New England and North Carolina. Rabies extended slowly across the country as the land was settled, eventually reaching the west coast. Today it is found all over the world from the arctic to the tropics, with the exception of Australia, New Zealand and Hawaii where the disease has never been introduced and where strict quarantine regulations have kept it out. In North Carolina from 1917 to 1934, positive laboratory confirmed cases in animals have ranged from 206-815 (av. 400). During 1935, there were 1,007 reported animal cases, and our state rabies law was enacted requiring every dog to be vaccinated. In 1936 there were 501 animal cases reported and from 1947-1951 the range has been from 211-365 (av. 265). Actually, since 1935, progress has been made but it has been too slow. Too often action is taken only when local rabies outbreaks occur and after the disease has caused great human distress. In 1951 there were 255 animal cases reported from forty-two counties. Animal cases dropped in 1952 to 178 cases reported from forty counties, and for 1953 the downward trend is continuing. Over the years, our human treatment vaccine dispensed from the State Laboratory of Hygiene has ranged from 550-2400 treatments annually. We do not know the number of human vaccine treatments which are obtained by private physicians from commercial biological houses, but it is believed to be quite large. The human treatment figures given here are only those dispensed by State Laboratory of Hygiene. In 1951 there were 830 treatments dispensed and 540 in 1952. Figures for 1953 are running about the same as those for 1952. We must continue our efforts to impress upon the public that rabies is a public health problem, because of the necessity for so many of our citizens to take the long, but life saving, series of treatments after being exposed to suspected rabid ani-

mals. We do occasionally have a human death from rabies, but the real problem is to control rabies in animals so that human antirabic treatments will be unnecessary or greatly reduced.

### Problems in North Carolina

After traveling many thousands of miles in almost every nook and cranny of North Carolina, I would say that apathy is our number one problem. Apathy exists among both the public and officials until the problem strikes home and reaches epizootic proportions. There is also the attitude in some areas that rabies is a disease with which we must live. Support and organization of rabies control programs by the health department is of tremendous importance. Although some laymen try to do a good job vaccinating, I am sure that everyone will agree that the veterinarian should immunize dogs against rabies for reasons too numerous to mention. The public expects and appreciates clinics operated by those best qualified to administer vaccines. Enforcement of our laws has always been a problem. We believe that education is the only real answer, but our laws are most helpful. We have two laws which are being integrated into our control programs. One is the state rabies law enacted in 1935 and recently completely revised in the 1953 Legislature. This law requires the annual vaccination of every dog and provides for clinics to be organized for this purpose. Various powers are also granted the county health officer in declaring quarantines, disposition of biting and rabies exposed dogs, and other functions pertaining to rabies control. This law assigns to the sheriff's office the duty of enforcement after the provisions for vaccination clinics have been carried out, but this usually is not done. In 1951 our legislature, because of the great destruction of livestock by stray dogs, passed the dog warden law. This law (optional for counties to adopt) gives the county commissioners the authority to appoint a dog warden and to pay him a salary and mileage out of the county dog

tax fund. (County dog tax is \$1.00 on males and \$2.00 on females). The dog warden's major duties are stray dog control, operation of a dog pound, assistance to the health officer in investigation of dog bites, assistance to veterinarians at clinics, distribution of information about rabies to the public, and the enforcement of all laws pertaining to dogs. I believe this is the key to rabies control. He must be a good man, sincere, interested in the work, and able to get along with all segments of the community, yet be firm when necessary. North Carolina now has or soon will have about 30 dog wardens serving over 2,000,000 (50 per cent) of our citizens. I believe many more dog wardens will be appointed within the next year as those now operating are extremely popular with the public. Dog Wardens are usually selected by a screening committee composed of the health officer, chairman of the board of commissioners, and a local veterinarian. This enables selection of the best qualified man for the job.

### Control Procedures

It is generally recognized that within specific areas the incidence of rabies shows definite peaks and valleys when charted on a graph. This fluctuation varies from place to place. As yet there has been no analysis of what factors contribute to the dynamics of epidemic curves either from a long or short range analysis.

Any attempt to evaluate the efficacy of a single type of control procedure is practically doomed to failure. In most control programs a great educational campaign is undertaken. Educational media includes dog control and vaccination. How many people get rid of their dogs when they learn of the presence of rabies? How many keep up their dogs who ordinarily let them run loose during the terror spread by a rabies outbreak? If dog control is emphasized, how many vaccinate their dogs? It is a waste of time to discuss the efficacy of any single type of control program unless questions such as these can be answered. It must be

stated that in some areas one type works and in other areas other types work. To insist on one type for the entire United States is narrow indeed.

Since rabies is a disease which depends on close contact of the infected animals with susceptible ones, control measures have been designed to accomplish one of two things or both: 1. Prevention of the contact of susceptibles with infected animals. 2. Decreasing the number of susceptibles within an area. In No. 1 we control the movement of animals (leash-laws, etc.) and although many communities have leash laws, I know of few where they are seriously enforced. Americans have given the dog an honored place in our society and will not tolerate restriction of his movements; therefore, this method has been all but abandoned. In Europe, however these laws have contributed to the success of their programs. This leaves only the second choice, that of reduction in density of susceptibles. By this method we destroy strays, trap and destroy wild animals when infection exists in wildlife and vaccinate our domestic animals. There is a third choice of doing nothing which I am sorry to say is still popular in North Carolina.

### What is An Adequate Program

I think of a program as adequate when the following phases are included: 1. Vaccination of 70 per cent of dog population by veterinarians if possible. I am often asked where the figure of 70 per cent comes from. A little experiment might give you some idea of how quickly an epidemic (human or animal) stops when 70 per cent are immunized. Place 11 balls (3 white, 7 black, and 1 red) in a cup and shake. Then roll 11 balls in a groove and notice positions. The white represents susceptible, black immune, and red infected. If the red one is next to a white one, then infection may take place. If red is next to black, rabies cannot be transmitted. After you do this a number of times, you realize the probability of transmission is rather remote especially when you

recall that dogs not vaccinated have some natural resistance and not all rabid dogs have virus in the saliva when they bite other dogs. Of course, inanimate objects such as balls are not complicated by biological behavior. The 70 per cent mentioned for rabies control is not based on balls but on the empirical method of trial and error.

2. Publicity and promotion of clinics and stray dog control sponsored enthusiastically by the local health department. Also, health education about rabies through all effective media.

3. Appointment of a full-time dog warden. (The heart of any effective program)

4. Provision for a sanitary dog pound.

To obtain the latter two, it is often necessary to present facts and data before the county board of commissioners. Representatives of the health department, local veterinarians, game protectors, county agents, superintendents of schools, the sheriff, farmers, dairy-men, wildlife clubs, and businessmen are urged to attend so that the commissioners may have the attitude of the public and other officials in the county. It is our job to convince them that a good rabies control program costs little compared to the dividends received by the public. Actually, with the program as outlined it is the dog owner (through dog tax and fees at vaccination clinics) who is paying for the problems which dogs create. There is no expense to the non-dog owner and everyone benefits greatly.

### Our Objectives

1. To reduce human anti-rabic treatment by:
  - (a) Reduction of rabies in animals, thereby reducing exposures to humans.
  - (b) Accurate information to the public about rabies.
2. Protection of our livestock.
  - (a) From rabies
  - (b) From wild stray dogs. (We have counties where it is not profitable to raise turkeys or sheep because of stray dogs.)
3. Protection of our game.

(a) Baby quail and rabbits.

(b) Doe deer and fawns. We have a great hunting state and each year our Wildlife Resources Commission is spending over two million dollars to conserve, protect and restore our game, yet last year over 1000 doe deer were killed by dogs! The stray dog is second only to man in the destruction of our game. Most county commissioners will agree that protection of our herds, flocks, quail and deer is most important. I sincerely believe we are "missing the boat" when we attack this herculean problem solely from the standpoint of rabies alone. Granted it is most important when human lives are involved but all too often there is little community support unless the rabies problem is extremely serious. When the above three objectives are presented to a local governing board or to a public meeting, it is difficult to find anyone against them, simply because everyone has interest in one or more of the objectives. It is looked upon as a permanent service which is needed in the community whether or not rabies is present, rather than a temporary emergency program to control rabies.

### Wildlife Rabies

In many sections of our country wildlife rabies has become a serious problem especially among foxes, skunks and coons. For the past few years we have had few reported cases of rabies in our North Carolina wildlife. We have reports of large fox populations in many of our counties. It may be that we are sitting on a tinder box, but I am not completely convinced that the mere increase in numbers even where the virus of rabies is present means an epizootic among the wildlife. We do not know all the conditions which determine the occurrence of an epizootic among wildlife. We must, how-



ever, keep alert to the dangers of importing wildlife from other states where rabies is prevalent. Recently, several hundred raccoons have been imported in the western part of our state from Florida and thus far one positive head has been reported from this shipment. The Wildlife Resources Commission has promptly taken action to prevent further shipment of Florida raccoons into North Carolina. We also recently received a disturbing report on rabies in bats in Florida and Pennsylvania. Little is known about rabies in insectivorous bats which are native to this country. In both states where bats have recently been found infected, humans were attacked and treatments were necessary. Basic research may give us the answer to the role that bats play in the spread of rabies.

### Summary

In closing, I should like to express my appreciation to all the health officers who have so generously given their time and cooperation in establishing better rabies control programs in North Carolina, especially when so many worthwhile programs are competing for the health officer's limited time. We have only scratched the surface in rabies control, but I am sure that we will continue to make progress. We have tried to keep you informed about rabies in our state from month to month by maps and other materials. It is our belief that each country has certain problems that are related specifically to that area. It is our desire, and I am sure your desire, to solve these problems with but one goal in mind: A healthier community in which to live, work play.

## STREAM SANITATION PROGRAM IN NORTH CAROLINA

By W. E. LONG, JR., Sanitary Engineer  
State Stream Sanitation Committee  
Raleigh, N. C.

### Introduction

The abundance of North Carolina's natural resources was a source of joy and wonder to the early settlers. They wrote glowing accounts of the rich untapped resources to their friends and relatives in England and Scotland. They wrote of the mild climate and of the adequate rainfall; of the deep fertile soil; of the magnificent forests of pine and hardwood; of the abundance of game; of the great navigable rivers and the clear sparkling streams that were alive with fish. The unbelievable productivity of nature in this area caused almost everyone to dream of wealth, and the inevitable development of the legend of inexhaustibility.

But how were these early colonists to know that within little more than two centuries, these same five hundred miles of wilderness, rising like terraces

from the tidal marshes to the Appalachian Plateau, would be transformed into homes, farms, and factories for over four million people? How were they to know that the forests would be cleared, the lands drained, roads built, water power developed, minerals extracted, factories erected and cities brought into being? They could not foresee that their descendants would devastate the forests, wear out and waste much of the crop land, decimate the wildlife, and pollute the streams.

Today, as you and I know, that is what has happened. The need for this most important asset, our water resources; is being greatly inflated. I say that because the *demand* for water is steadily rising with the growth of population in our towns and cities, and the development of our industries. And the *supply* of usable water is decreasing because of pollution resulting from the same growth of population and

the expansion of industry. If not checked, this situation will lead to serious consequences. If suitable water is not available, our cities and industries will perish.

Prior to 1951, the waste disposal provisions of the General Statutes consisted of only three public health laws, two of which were first passed in the 1890's and none have been amended since 1911. Time does not permit a discussion here of the early legislation, and the great amount of work done which led to the passage of the present law.

### Present Law

The present law relating to stream sanitation in North Carolina is designated as Chapter 606, Session Laws of 1951 or Article 21 of Chapter 143 of the General Statutes.

### Policy of the State

The policy of the State is set forth in Section 143-211 which states that, "the water resources of the State shall be prudently utilized in the best interest of the people. To achieve this purpose, the government of the State shall assume responsibility for the quality of said water resources." This law created, within the State Board of Health the State Stream Sanitation Committee, which was charged with the maintenance of the quality of the water resources, and the establishment of methods designed to protect the water requirements for health, recreation, fishing, agriculture, industry and animal life. Also this Committee was directed to "establish and maintain a program adequate for present needs, and designed to care for the future needs of the State."

### Composition of Committee

The State Stream Sanitation Committee is composed of eight members as follows: "The Chief Engineer of the State Board of Health, ex officio, the Chief Engineer of the Water Resources and Engineering Division of the Department of Conservation and Development, ex officio, and six mem-

bers appointed by the Governor, one who shall at the time of appointment be actively connected with and have had production experience in the field of agriculture, one who shall at the time of appointment be actively connected with and have had experience in the wildlife activities of the State, two who shall at the time of appointment be actively connected with and have had practical experience in waste disposal problems of municipal government, and two who shall at the time of appointment be actively connected with and have had industrial production experience in the field of industrial waste disposal."

### Duties of Committee

Section 143-215 sets forth the duties of this Committee as follows:

"1. To develop and adopt, after proper study, a series of classifications and the standards applicable to each such classification, which will be appropriate for the purpose of classifying each of the waters of the State in such a way as to promote the policy and purpose of this Article most effectively;

"2. To survey all the waters of the State and to separately identify all such waters as the Committee believes ought to be classified separately in order to promote the policy and purposes of this Article, omitting only such waters as, in the opinion of the Committee, are insufficiently important to justify classification or control under this Article; and

"3. To assign to each identified water of the State such classification, from the series adopted as specified above, as the Committee deems proper in order to promote the policy and purposes of this Article most effectively."

### Water Resources of the State

What are the water resources of the State and what is the magnitude of the problem? The water resources of the State consist of sixteen river basin areas covering some 52,000 square miles. From a *quantitative* standpoint the State has an ample supply of surface water to meet all of its potential needs

for many years to come. However, it is not enough to weigh merely the quantitative demands for the State as a whole. The geographical distribution of this demand is also of great importance for the water resources are valuable only to the extent to which they may be utilized. For instance, a plentiful water supply in the John H. Kerr Reservoir would be of little immediate value to the citizens of Raleigh, who could bring it to their city for use only at great expense. It is when *qualitative* measures are made that our water problem becomes much more acute.

### Magnitude of the Problem

The magnitude of the problem is linked to the various uses made of these water resources. It would be difficult to catalog all the uses made of these waters, but some of the more important may be listed under these broad categories: (1) human consumption, (2) industrial and commercial uses, (3) wastes disposal, (4) agricultural uses, (5) commercial fishing and (6) recreational uses. Time does not permit us to discuss each of these here; however, many cities and communities recently have felt the pinch of water scarcity. Abundant pure water supplies are a chief consideration in locating new industries because both industry and individuals are using more and more fresh water. For instance, it takes about 50,000 gallons of water to produce a ton of paper; a ton of water is required to "finish the woollens" in a three-piece suit; 150 tons of water are used to make a ton of steel. Agriculture, too, is a heavy user of water. It takes 4,000 gallons to grow a bushel of wheat and 1,300 gallons to produce a pound of beef and prepare it for the butcher shop where we buy it.

In the matter of sewage disposal, North Carolina has 296 communities where 1,289,070 people live that have some kind of sewerage collection system. Of the people about 84% are connected to the available sewerage system. Approximately 65% of these

sewerage systems have some kind of sewage treatment. The remaining 35% dump their raw sewage into the streams without any kind of treatment.

The problem of industrial waste treatment is much more complicated than that of treating human wastes. Because of their highly varied natures, industrial wastes must be considered on an individual basis, rather than as a group. Three general approaches are being made to the situation. The first is to change the industrial process, in order to make better use of the materials and consequently to reduce the amount discharged as wastes. In some cases, by-products are being developed which use the materials being discharged, or the wastes may be re-used in the original process. The second approach is to treat the industrial wastes with municipal sewage. Where this can be done, this approach is the most economical. In some cases, however, the quantity and nature of the industrial wastes are such as to interfere with processes in municipal plants, and they must either be pre-treated before entering the sewerage system or kept out altogether. The third approach is for the large industrial plants to provide their own treatment facilities. This is usually the most expensive method, but in some cases it is dictated by the circumstances.

Each river basin must be surveyed and studied separately, and classified after public hearings are held. Then and only then do the pollution abatement provisions of the law become effective.

### Progress to Date

In developing the classes for the waters of North Carolina and the Standards of water quality and purity which shall be applied thereto, much study and work was required. The proposed Rules and Regulations to be Followed by the State Stream Sanitation Committee in Classifying and Assigning Standards of Quality and Purity to Designated Waters in the State were worked out. These proposed items were drafted, and through many colloquies of engineers, professors, repre-

representatives of municipalities and industry, they were revised several times and later submitted to the public in a series of public hearings as provided by law. After considering all this information, the Committee adopted the Classes and accompanying Standards along with the Rules and Regulations to be followed in classifying and assigning Standards of Quality and Purity to Designated Waters of North Carolina. Thus a yardstick was developed with which to measure the pollution problem in the State.

Time does not permit a discussion of the classes and accompanying standards, but for fresh surface waters, there are six classes as follows:

**Class A-1** waters will be of such quality that they will be suitable for drinking purposes with only simple chlorination as a means of purification.

**Class A-II** waters will be of such quality that they will be suitable for drinking purposes after the usual treatment processes such as coagulation, sedimentation, filtration and disinfection. All waters used for drinking purposes must meet the "Public Health Service Drinking Water Standards."

**Class B** waters will be suitable for outdoor bathing and any other usage except as a source of drinking water.

**Class C** waters will be suitable for fish and wildlife propagation and any other usage except for bathing or as a source of drinking water.

**Class D** waters will be suitable for agriculture and industrial cooling purposes and any other usage except fishing, bathing or as a source of drinking water.

**Class E** waters will be suitable for navigation where navigable waters are involved, and may be used for waste disposal. However, in no case shall any usage result in the development of an offensive condition.

There are four classes established for

tidal salt waters as follows:

**Class SA** waters will meet the recommendations of the Public Health Service for shellfishing for market purposes.

**Class SB** waters will be suitable for bathing and any other usage except shellfishing for market purposes.

**Class SC** waters will be suitable for fishing, and any other usage except bathing and shellfishing for market purposes.

**Class SD** waters will be suitable for navigation where navigable waters are involved, and may be used for waste disposal. However, in no case shall any usage result in the development of an offensive condition.

Field surveys and studies of the Yadkin River Basin have been completed, and the report containing all the findings is almost ready for publication. Also the field studies are practically completed for the Whiteoak, Chowan, and the Roanoke River Basins.

### Future Outlook

Progress in stream sanitation will be made as the people of the State are educated to the needs by the facts. We are striving to get the facts in this matter in accordance with the Law, and to present them to the people for the necessary action.

This process of education will require the co-operation and help of all agencies interested in this most important work.

It is anticipated that some pressure will have to be exerted on some to accomplish the necessary results. In this connection, here is a need for more adequate legislation.

However, with increased public support, possible improvements in the Law, more money and personnel, we can make North Carolina a greater "Variety Vacationland" and a better place in which to live.

## LIFE AND DEATH IN 1953

By WILLIAM H. RICHARDSON  
North Carolina State Board of Health

Some years ago, a song was written which gained considerable popularity and has never ceased to hold an appeal for those who hear it sung by a talented soloist. The name of this particular song is, "I Love Life." As a matter of fact, we all love life. Although none of us can explain it, it is something to which men and women have clung during all the millenniums of history and which few relinquish, without regret. There is something buoyant about the song just mentioned which gives one a definite lift when it is effectively rendered. On the other hand, many songs have been written about death. Most of these are mournful dirges; and, at best, teach only a lesson of resignation, rather than triumph. Most tributes to deaths are sacrificial in their nature, written and sung in about the same spirit that possesses the heart of a mother about to cast her baby into the Ganges River.

To sum up this introductory paragraph, we might say that both life and death hold a peculiar interest for all human beings. This discussion is about life and death in North Carolina, during 1953, of which a complete provisional report has been compiled. In the State Board of Health there is what is known as a section devoted to public health statistics. It is the duty of vital statisticians assigned to this section to record accurately all births and deaths reported from each of the one hundred counties.

### New High Record

Figures show that during 1953 there were more live births reported in North Carolina than during any previous year in which vital statistics have been recorded. From January 1 through December 31, there were 113,386 live births reported to and recorded by the State Board of Health. This total set an all-time record. The total for

1952, incidentally, was 112,480. It is gratifying to note that, although we had a noticeable increase in the number of live births last year, there was a decrease in the number of deaths, from all causes, the total reported having been 32,292, as compared with 32,564 during the preceeding year of 1952.

Included in this total were 3,737 deaths among infants during the first year of life. This figure also showed a decrease, compared with 3,977 in 1952.

Of the total of 32,292 deaths reported in North Carolina last year, 18,522 were attributed to just three causes, namely—heart disease, apoplexy, and cancer. It is somewhat encouraging to note that, for the first time in recent years, there were slight decreases recorded in deaths from both heart disease and apoplexy. While this decrease was only slight, in each case, it was, we repeat, encouraging.

Deaths from cancer, however, showed an increase of around one hundred. Cancer, we know, is one of those so-called degenerative diseases, the only cure for which is early detection and treatment. That is why public health officials and private practitioners of medicine all join in urging those who have any suspicion of cancer to seek the advice of a competent physician before it is too late.

### "Arks of Safety"

Throughout written history, men and women have been warned of dangers to their existence, some of which are preventable and some inescapable. It is always a good and safe practice to seize any reasonable opportunity to escape disaster. Without going into either religion or ancient history, we are told that Noah warned the people of his age of the approach of the great flood. According to ancient history,

only those were saved who took his advice and entered the Ark. In this modern age of medical advancement, we have many "arks of safety," into which we can enter, if we take the advice of those who sound notes of warning. Even a chance at life is better than certain death.

Now that we have considered the totals contained in North Carolina's report of life and death in 1953, let us consider some of the specific causes of death most of which always have existed, but from many of which we now can escape into arks of safety, if we follow the advice of medical science and common sense.

First of all, let us consider the number of infants who died during 1953. There were, we repeat, 3,737 such deaths reported as compared with 113,386 live births. Just how does this compare with former years? We now have a population of more than four million, but our infant mortality rate is not reckoned on a basis of population, but in comparison with the number of live births, each year.

In 1916, the first year in which causes of death were reported and classified in North Carolina, there were 7,112 deaths among babies under a year old, when the total number of live births was only 76,658. The death rate that year was 98.2 per one thousand live births. During 1953, only 115 maternal deaths were reported in North Carolina, as compared with 593 in 1916. Here, again, we have a gratifying decrease.

### Decrease in Maternal Deaths

Time will not permit a full discussion of all the reasons why fewer women are dying today, as a result of pregnancy and childbirth, but a well-known physician connected with the State Board of Health was asked to state his opinion, briefly, and to give at least one reason for the gains we have made. This physician pointed out the increasing recognition of the importance of good nutrition during pregnancy. He stated that this might well constitute a factor in the prevention of certain forms of toxemia in pregnancy.

He was asked if the administration of certain antibiotics might not account for fewer deaths from what is called "childbirth fever," and he said this, undoubtedly, was true. With the advances of the knowledge about prenatal care, both mothers and their babies are given a better chance than in former years, when the maternal and infant death rates both were appalling. It is assumed now that any well-informed woman who becomes pregnant immediately places herself in the hands of a competent physician for advice and guidance, looking toward a safe delivery and the birth of a healthy baby.

It is gratifying to note that, in 1953, there was not a single death from malaria reported to the State Board of Health. In 1916, before the employment of modern drainage and other methods of malaria control, there were 337 such deaths reported. During that same year, typhoid fever accounted for 702 deaths, as compared with four last year—what a comparison! Even those who are not physicians or public health workers know that typhoid fever is controlled and eliminated by immunization and sanitation.

### War on Tuberculosis

Another disease which is greatly being brought under control is tuberculosis. During 1916, there were 3,129 deaths from respiratory tuberculosis reported to the State Board of Health. Last year, all forms of tuberculosis caused only 413 reported deaths in North Carolina. Tuberculosis, like cancer, must be detected and treated in the early stages, if cures are to be effected. The statement will bear repeating that North Carolina, at the present time, is engaging in a mass survey of its people, through the use of X-ray, to detect tuberculosis in the early stages, in order that patients may be treated and cured. This program has proceeded with great success during the past and promises to become accelerated with the passage of time. We not only are finding cases, in their early stages, but have provided

added facilities for hospitalizing those who need treatment. It may be a far cry to the day when Trudeau introduced sanatorium treatment into the United States, but the method certainly has been not only remarkably developed, but has more than justified itself in the results achieved.

Although influenza and the pneumonias showed an increase in deaths reported during last year, the total having been 1,585, it must be remembered that, in the treatment of pneumonia, remarkable progress has been made. Compared with 1,585 deaths from influenza and all forms of pneumonia last year, there were 2,517 pneumonia deaths reported in 1916; and in 1918, the year of our greatest influenza epidemic, pneumonia alone claimed 4,210 deaths among our people.

### Much Work Ahead

This discussion has been confined largely to diseases which have been brought under control, either wholly or in part, by modern scientific methods of both immunization and treatment. While the degenerative diseases

continue to take an increasingly heavy toll among the citizens of North Carolina, it must always be borne in mind that, as we increase the span of human life, more people are reaching the age when such diseases lay hold upon them and, all too often, take their lives. Public health, as well as the medical profession, in general, is giving more thought to the study of degenerative diseases as time goes on, with the hope that these efforts will be rewarded in due time.

The State Board of Health and the county boards of health now have supplies of material which sheds light on how to handle preventable communicable diseases. Any of this material may be had, upon request. The mission of public health is to try not only to aid in the discovery, and preparation and use of preventive medicine, but to keep the public informed, through the various methods at its disposal—over the radio, through the press, and by the spoken word, passed on from community to community by those who have dedicated their lives and services to the cause of preventive medicine.

## NOTES AND COMMENT

By THE EDITOR

### A Quote From Dr. C. C. Applewhite

The responsibility of safeguarding the health of the citizens of the state reposes in the State Board of Health. Notwithstanding this fact, the federal government has a clear-cut responsibility to assist in the maintenance of adequate health services within the state for the following reasons:

First, national defense is definitely a responsibility of the federal government. To anyone passingly familiar with sound public health administration, safeguarding the health of the civil population during peace and war times is definitely an integral and important phase of national defense. A healthy citizenship is essential for the protection of the sinews of war. The federal government in times of

national emergency does not hesitate to draft manpower for the defense of the nation. By the same token it would seem logical that the federal government should aid the state and local health departments in the execution of a sound public health program designed to produce physically, mentally and emotionally sound and robust groups of individuals who will be called to serve in such an emergency.

In the second place, by an act of Congress, the U. S. Public Health Service is charged with the responsibility of preventing the interstate spread of disease. It would manifestly be foolish to throw a cordon of officers around each state for the purpose of keeping communicable diseases from crossing state borders. For a number of years

the Public Health Service, in cooperation with various state health departments, has studied how best this legal responsibility of the Public Health Service can be met. After years of trial and experimentation it has been a joint conclusion that the best way to prevent the interstate spread of disease is to control it at its source. To accomplish this result some type of public health machinery is necessary. Finally, as a result of group thinking the local health department, manned by well trained personnel, has been found to be the agency par excellence for controlling disease at the source and consequently, preventing the interstate spread of disease. Therefore, the allotment of federal funds for the maintenance of local health departments through the state health departments should not be considered a federal subsidy but as a just payment by the federal government to the local health departments for supplying a service which those agencies can perform more efficiently and effectively than can the Public Health Service. For these two reasons it is definitely felt that the federal government has a moral and legal responsibility to render financial aid to the states in supporting effective health services—state and local.

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**New Summer Course**  
**University of North Carolina**  
**School of Public Health**  
**1954**

### HOME ACCIDENT PREVENTION

In the sheltering walls of our sacred homes, men, women, and children lived, loved, and were loved. Today, 29,000 of these are but sad memories. In one year, 1952, the cost of home accidents was \$700,000,000. This minimum cost estimate was incurred by 29,000 deaths and 4,300,000 injuries. Many of these could be prevented.

The great toll of life made by home accidents each year is definitely a public health problem. The many home visits made by public health nurses places them in a position to teach preventive measures.

Madeline Pershing, U. S. Public Health Service, will conduct this five-day course.

**Special Fields in Public Health Nursing**  
**Cancer Control—July 19-24**

—Katherine Nelson

**Home Accident Prevention—July 26-31**

—Madeline Pershing

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For application blanks and information, write to:

Margaret Blee, Associate Professor  
 Box 229

Chapel Hill, North Carolina

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### CLEANSING AGENTS CAUSE OF MUCH OF HOUSEWIVES' ECZEMA

Housewives' eczema is competing with housemaid's knee as an occupational hazard of being "just a housewife."

Housewives' eczema, an external skin condition resulting from contact with cleansing agents used in housework, is becoming more and more prevalent, Dr. Matthew J. Brunner, Chicago Heights, Ill., wrote in the *Journal of the American Medical Association*.

Synthetic detergents and other known irritants such as ammonia water, hypochlorite bleaches, phosphates, abrasive powders, and organic solvents in waxes and polishes may cause eczema, according to Dr. Brunner.

Most cases of housewives' eczema begin with mild dryness, redness and scaling, Dr. Brunner stated. This becomes more severe under continued exposure to soap and water, and leads to fissuring and crusting. Eventually blisters form and thickening of the skin occurs. The first reaction, often on the sides of the fingers and in the webs, occurs with special frequency on the left fourth finger, under the rings. Severe cases may involve the hands, forearms, arms or face. Extreme itching, burning and discomfort are common complaints.

Many times the eczematous condi-



tion is aggravated by secondary influences of excessive sweating, especially during prolonged wearing of protective gloves or prolonged soaks or wet dressings, and by heavy applications of greasy ointments, Dr. Brunner added. Circulatory influences, including exposure to heat, alcohol ingestion and emotional upsets, also may cause persistence of the eruption.

"Treatment of housewives' eczema is based on these premises: that the eczema is primarily due to external irritation, that the inflamed skin is hyperirritable, and that it will react to certain influences and agents innocuous to intact skin," he said.

Contact with irritating agents must be avoided if the condition is to heal, Dr. Brunner pointed out, and the patient should do only a minimum amount of housework. Rubber gloves should be worn over separate inner cotton gloves during "wet work," the patient should wash only with tepid water and a special solution, and ointments prescribed should be applied lightly. As recurrences are not infrequent after reexposure to household irritants, continued use of rubber gloves for dishes and laundry work should be a permanent protective measure.

"Eczematous eruptions of the hands have always constituted an impressive proportion of all dermatological cases," Dr. Brunner stated. "As with other eczemas, eczemas of the hands have a varied etiological background, but it appears that an increasing number are being seen in housewives, among whom the factor of external irritation from cleansing agents used in housework may be of prime importance.

"Of 145 cases of nonspecific eczematous dermatitis of the hands seen in the past 12 months, 108 were in housewives. The duration of the condition at the time of examination varied, but many of these patients had had an eruption on the hands, intermittently or continuously, for years. Few eruptions could be cleared in less than four weeks, and some required up to three months of treatment.

"Similar eruptions may also be seen

in bartenders, soda jerks, and others in occupations involving 'wet work'."

Dr. Brunner is associated with the department of dermatology, Northwestern University Medical School.

\* \* \* \*

## **STUDY OF ATMOSPHERE CONTAMINANTS AS CAUSE OF LUNG CANCER URGED**

Study of cancer-producing hydrocarbons in the atmosphere of urban areas and their possible connection with the increasing frequency of human lung cancer was urged in two articles in Archives of Industrial Hygiene and Occupational Medicine, published by the American Medical Association.

One article discussed the formation of skin tumors and cancers on mice following the painting of their skin with chemicals removed from the atmosphere of Los Angeles. The atmospheric samples were collected during both smog and non-smog periods of the year, and the chemicals removed. These chemicals were then painted on 76 black mice three times a week.

"The first tumor appeared in 15 months and three day (465 days) after the initiation of painting," the article stated. "There were 31 survivors at the time of the appearance of the first tumor, and 13 tumor-bearing mice have thus far been demonstrated."

The skin tumors appeared primarily in the painted area, according to the article. Nine cancers were proved, it was stated, and multiple tumors occurred in four mice. Sixty-nine other mice were not painted with such chemicals and acted as controls. No skin tumors were seen in the 37 of these mice that were alive at the time the first tumor appeared in the test animals.

The second article described how skin tumors and cancers formed on black mice following painting with gasoline-engine exhaust products.

"This pollution source is an ever-increasing one, and its study in Los Angeles County is of particular interest in that a large number of automobiles (2,000,000) are driven an average of 15,000,000 miles per day and add their

pollution products to a frequently already highly polluted atmosphere known as smog," the article pointed out.

"One hundred eight black mice were used in these experiments. The first tumor appeared in 13 months and 25 days (390 days) after the initiation of painting. Eighty-six mice survived at the time of the appearance of the first tumor, and 38 tumor-bearing mice have thus far been demonstrated.

"The incidence of multiple tumors was remarkable. More than 60 per cent of the tumor-bearing animals bore multiple tumors. In 22 of the 38 tumor-bearing animals, carcinomas were demonstrated.

"Sixty-nine black mice were used as controls, and 42 were alive at the time of the first tumor appearance in the test animals. No skin tumors were seen in the control mice."

The increasing frequency of lung cancer presents several facets which indicate that the atmospheric environment may be etiologically associated with this observed increase, the articles stated.

A study of the atmosphere and the sources of man-created pollutants, it was said, seems especially indicated with the realization that (1) a disproportionate rise in incidence of lung cancer has been noted in urban population groups; (2) the atmosphere contains cancer-producing substances, and (3) the accelerated rate of lung cancer frequency parallels most dramatically the industrialization of our society with its concomitant increase in air pollution.

"The presence of carcinogenic hydrocarbons in the atmosphere of urban areas indicates the need for their study to assess their possible role in the observed increasing frequency of human lung cancer," one article stressed. "The parallel between this increase and the urbanization and industrialization of our society is positive.

"The introduction of the gasoline engine as the most prominent source of motive power is one of the chief characteristics of this industrializa-

tion, and, in consequence, petroleum combustion and oxidation products have become one of the main air-pollutant materials. The experimental carcinogenicity of certain of these products has been established, and suspicion must be directed to them in relation to the lung cancer increase."

One article was prepared by Paul Kotin, M.D., Hans L. Falk, Ph.D., Paul Mader, Ph.D., and Marilyn Thomas, B.A., all of Los Angeles; the second was prepared by Drs. Kotin and Falk and Miss Thomas. The authors are associated with the departments of pathology and biochemistry, school of medicine, University of Southern California, and the laboratory of the Los Angeles County Air Pollution Control District.

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### **SAY MOST BOWLEGGEDNESS IN CHILDREN DISAPPEARS SPONTANEOUSLY**

Don't worry if your preschool child has bow legs—he'll probably outgrow it.

"Exaggerated bowing of the lower extremities occurs with surprising frequency in apparently healthy, well-nourished infants and children," three Ann Arbor, Mich., physicians wrote in the *Journal of the American Medical Association*. "In most instances the prognosis for complete, spontaneous regression of the bowing is excellent, the legs usually having straightened by the age of four or five years."

However, in some cases, the doctors stated, x-ray examinations are imperative to rule out significant diseases.

It is recognized that virtually all infants have some degree of bowing of the legs that frequently persists into the second or third year, according to the doctors. In some instances the bowing is due largely to normal distribution of adipose tissue, which in infancy tends to be more heavily deposited on the outer surfaces of both the thigh and lower leg, but in most infants some degree of actual bowing of the bones is present, they added.

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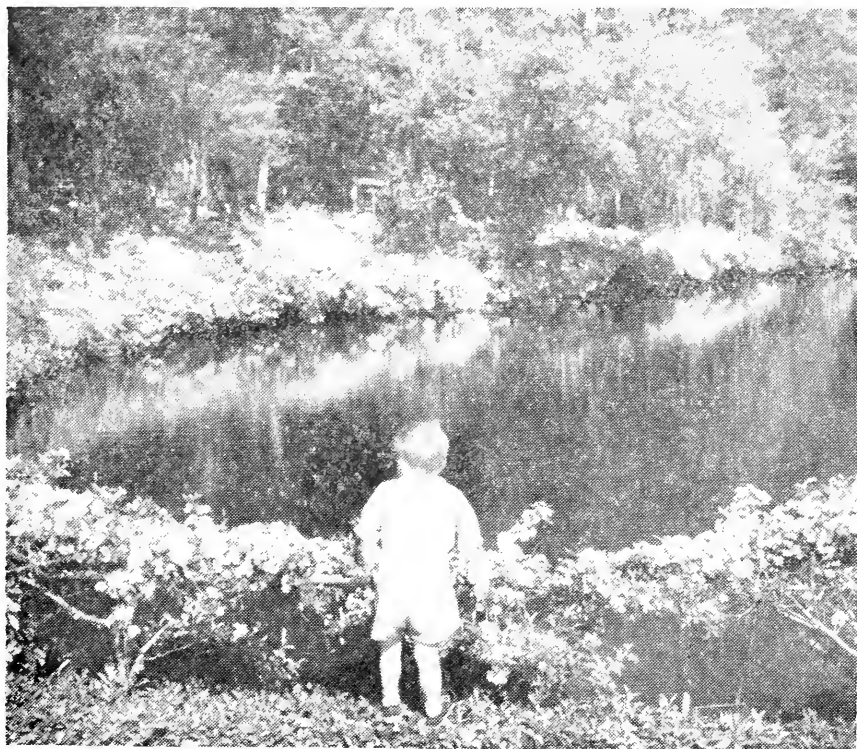
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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
Malaria	Venereal Diseases	

### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine) monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
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# Health Bulletin

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## DIPHTHERIA—A LOCALIZED HEALTH PROBLEM IN NORTH CAROLINA

By CHARLES M. CAMERON, JR., M.D., M.P.H.  
Chief, Communicable Disease Control Section  
North Carolina State Board of Health

The accurate definition of the factors associated with the etiology, epidemiology, treatment and prevention of a disease is a step considered by many as assuring that the eradication or practical elimination of the disease as a menace to human well-being is within sight.

That such reasoning is fallacious is brought home almost daily to those with interest in or responsibility for following the incidence of communicable diseases within the body politic. Regrettably, one notes that despite the imposing body of knowledge which has been in existence about diphtheria for many years, more than 5,700 cases of this disease and over 300 deaths have been recorded in North Carolina in the past ten years.

That the diphtheria morbidity rate in North Carolina has been consistently greater than that of the United States as a whole has been recognized by physicians and other health workers in

the state for many years. In 1933 North Carolina's diphtheria case rate was two times that of the United States and by 1944 had decreased to only about one and a half that of the nation-wide average. In 1945 this state experienced an increase of 123 per cent in the recorded cases of diphtheria while the national increase noted that year was only 21 per cent.

Following this pronounced upsurge in reported cases of diphtheria, the Division of Epidemiology of the State Board of Health surveyed approximately 1000 cases of the disease to determine possible causative factors. It was revealed that over 66 per cent of cases reported had received no diphtheria immunization, and 20 per cent had received only one injection of the immunizing agent.

It was concluded that the North Carolina immunization program was of limited effectiveness and that the number of infants receiving basic immuni-

zation was inadequate. Renewed emphasis by health departments and private practitioners on the diphtheria immunization was called for.<sup>1</sup>

It is now appropriate to review the incidence of cases and deaths from diphtheria in the years since this re-dedication to the principles of immunization as a diphtheria control measure.

Table I shows the numbers of cases and deaths and rates per 100,000 population for North Carolina for the years 1933 through 1953. It is noted that since the high incidence of 1945 when a rate of 42.0 cases per 100,000 population was recorded, there has been a gradual, irregular decrease in the case rate until the year 1953 saw a total of only 129 cases recorded. The rate based on the provisional 1953 case reports

is 3.1 per 100,000. This is the lowest number and rate ever reported in North Carolina.

There has been a similar trend noted in the death rate from diphtheria from the 1933 rate of 6.6 per 100,000 and the 1945 rate of 2.5 per 100,000 to 0.14 per 100,000 in 1953. The case fatality ratio has somewhat decreased in the twenty-year period but has remained fairly constant in the past few years as is shown in Table I.

The decrease in diphtheria since 1945 has been encouraging; however, Table II reveals that the North Carolina case rate has consistently remained from two to three times greater than that of the United States as a whole. Although the rates compare more favorably with those of neighboring South

TABLE I

*Reported Diphtheria—North Carolina  
Cases and Deaths  
1933-1953*

Year	Number Cases	Number Deaths	RATES PER 100,000 POPU- LATION	CASE FATALITY PER CENT DEATHS	
			Cases	Deaths	Cases
1933	2,497	216	75.2	6.6	8.6
1934	2,114	199	62.9	6.4	9.4
1935	1,720	162	50.9	4.8	9.4
1936	2,347	188	69.0	5.6	8.0
1837	2,056	160	59.9	4.8	8.0
1938	2,442	168	70.3	4.9	6.9
1939	2,368	164	67.0	4.8	6.9
1940	1,125	107	31.5	3.0	9.5
1941	1,629	83	44.4	2.3	5.1
1942	1,187	76	32.4	2.0	6.4
1943	801	53	21.7	1.4	8.6
1944	665	40	18.5	1.0	6.0
1945	1,475	96	42.0	2.5	6.5
1946	590	46	16.2	1.3	7.8
1947	751	32	20.2	.86	4.3
1948	506	30	13.3	.79	5.9
1949	550	25	14.2	.65	4.5
1950	499	27	12.3	.67	5.4
1951	373	18	9.0	.45	4.7
1952	202	9	4.8	.22	4.5
1953	129*	6**	3.1	.14	4.6

\* Cases Reported through January 25, 1954

\*\* Deaths Received through December, 1953

Atlantic states, North Carolina's case rates also have exceeded those of an average of the South Atlantic states. In 1952, the latest year for which complete figures are available, the United States case rate was 2.0 per 100,000, the rate for the South Atlantic states as a group was 4.4 per 100,000 and the rate for North Carolina was 4.8 per 100,000.

In an attempt to determine additional factors which may influence the incidence of diphtheria in North Carolina, the 129 case reports recorded during 1953 have been subjected to a brief epidemiological review.

The month of peak incidence was October when 32 cases were recorded. Lowest incidence was in July when only 5 cases were recorded. Case reports reaching the Communicable Disease Control Section have averaged slightly more than 10 per month during 1953.

The distributions of cases by age and color and age and sex are shown in Table III and IV. Approximately 67% of cases occurred in children under 10-years of age and approximately 50% of cases were in children under 5-years of age. Only two cases were recorded in children under one year of age. A total of 27 cases recorded in age groups over

15-years of age. This conforms to the national trend wherein diphtheria is being observed more frequently in older age individuals.<sup>2</sup>

The largest number of cases was recorded in the age group from one to four years (59) and the next largest group (26) was found in the age group from five to nine years.

A total of 70 cases out of 129 were among females for a sex specific case rate of 3.5 per 100,000. Diphtheria occurred in 57 males for a sex specific rate of 2.8 per 100,000. This difference may be attributable to increased incidence in the older age groups among females. Among males about 90% of cases were recorded in the age groups under 10 while only 50% of female patients were in these same age groups. It is recognized that girls and women from the late teens on have responsibilities in the home care of sick individuals and this increased risk of exposure may lead to higher incidence of clinical disease.

The number of cases were distributed evenly between the white and non-white group; however, the race specific case rates reveal considerable difference. The rate for whites was calculated at 2.05 per 100,000 while that for non-whites at 5.9 per 100,000. The non-white group

TABLE II

*Reported Diphtheria  
Case Rates Per 100,000  
North Carolina, South Atlantic States,  
and the United States  
1948-1952*

Year	Rates per 100,000 Population		
	North Carolina	South Atlantic States	United States
1948	13.3	12.2	6.6
1949	14.2	9.5	5.4
1950	12.3	7.5	3.9
1951	9.0	5.4	2.6
1952	4.8	4.4	2.0

North Carolina data from Public Health Statistics Section.

Other Rates from Communicable Disease Center, P.H.S.

TABLE III

*Reported Diphtheria—North Carolina  
Provisional Total Cases Reported  
For 1953 By Age and Color*

Age	White	Non- White	Total
Under 1	2	0	2
1-4 years	24	35	59
5-9 "	16	10	26
10-14 "	6	9	15
15-19 "	8*	3	11
20-24 "	1	2	3
25-29 "	4	0	4
Over 29	3	6	9
	<hr/> 64	<hr/> 65	<hr/> 129

\* Includes one case color unknown

TABLE IV

*Reported Diphtheria—North Carolina  
Provisional Total Cases Reported  
For 1953 By Age and Sex*

Age	Male	Female	Total
Under 1	2	0	2
1-4 years	34	25	59
5-9 years	16	10	26
10-14 years	2	13	15
15-19 years	2	9	11
20-24 years	1	2	3
25-29 years	0	4	4
Over 29	1	8	9
Totals	58	71	129

in the ages from one to four comprised that largest single group of cases. In the ages over 29 years, six cases were recorded among non-whites while three cases were recorded in the whites.

Diphtheria was reported from 48 of North Carolina's 100 counties. Over half the total cases were recorded in ten counties of the state. Counties where the number of cases reported as well as the case rate was in excess of the state average are shown on Table V. The largest numbers of cases were recorded in Scotland and Henderson counties, each of which reported 10 cases. The respective rates per 100,000 population are 37.0 and 31.2. The highest rate in the state was recorded in Pamlico County; however, due to the small population in this county such a calculation does not reflect accurately the relative importance of diphtheria incidence in comparison with larger counties.

Due to the paucity of epidemiological information available from the case report cards, further data are not available at this time. Detailed field epidemiological studies in counties with incidence in excess of that of the state average seem worthy of commendation to local health department staff members.

TABLE V

*Reported Diphtheria Cases—  
North Carolina  
1953*

*By Selected Counties Showing Number  
And Rate Per 100,000 Population*

County	Number of Cases	Rate Per 100,000 Population
Scotland	10	37.0
Henderson	10	31.2
Pitt	8	12.5
Lenoir	7	14.7
Edgecombe	7	13.3
Robeson	7	7.7
Halifax	6	10.2
Gaston	5	4.2
Pamlico	4	40.0
Alamance	4	5.3

### Summary and Conclusions

Diphtheria incidence in North Carolina in the past 20 years has been reviewed. While significant progress has been made in the reduction of both deaths and cases, the case rate for the state has consistently remained above that of the United States as a whole and that of the average of South Atlantic States.

The 129 cases recorded in 1953 represented the lowest total on record for North Carolina. The 1953 death rate is similarly the lowest on record.

A brief epidemiological review has been made from the 129 case reports in the files of the Communicable Disease Control Section of the State Board of Health. The largest number of cases was recorded in the age groups from one to four and from five to nine. An increase in the number of cases in the older age group was also noted.

The race specific case rate among non-whites was more than twice that of the white population of the state.

Over 50 per cent of all cases were found in ten North Carolina counties and over half the counties of the state were free from the disease.

Field epidemiological studies in high incidence counties are indicated, but





effort directed toward improvement of the type of instruction given the midwives, and the following report gives in brief outline the summary of this undertaking. As a result of this special institute held in 1952, and the one in 1953, some suggestions from different areas of the State have been presented in brief outline also. These are suggested ways in which the problem might be approached from the different areas, recognizing that the needs show much variation. Each local health department, or several in one geographic area, might determine which method of instruction and supervision would more nearly meet their needs. There are, undoubtedly, many other methods that would prove effective, but it is only through group cooperation that any of these can succeed.

## REPORT—1952

### I. Some of the Factors in Planning a Special Program

A. A 1950 county survey of deliveries by midwives in North Carolina was made to determine where, or if, there was a special area needing more emphasis on the midwife supervision program. The results of this survey indicated that approximately one-third of the total midwife deliveries for the State were in the south central area. (See Map 1.) The general practice of midwife supervision had been home visits by the nurses in the local health departments. Annual meetings were held, at which time physical examinations, bag inspections, renewal of permits and some demonstrations were done.

### B. Administrative Procedures

This problem was brought to the attention of the health officers and nursing staffs of the local health departments in this area by the Consultant Nurse. Ways and means had been discussed, but prior to this time no specific plans had been made on an area basis. It was the consensus of opinion that an institute be held for

teaching midwives in this area. This decision was brought to the attention of the Directors of the Division of Personal Health and the Division of Local Health Administration.

### II. Selection of Facilities and Attendance at the Institute

A. With the approval of the Directors, a two-week institute for midwives was planned and held at Fayetteville State Teachers College, Fayetteville, N. C. Dr. J. W. Seabrook, President of the College, and other faculty members acted in an advisory capacity for arrangement of dormitory accommodations for the midwives, classroom facilities, equipment and supplies, other than those bought by the MCH section. Their wholehearted cooperation helped immeasurably in making this institute successful. Plans and details were worked out by the Consultant Nurse for the area, and the actual conduct of the institute itself was under her direction.

### B. The Selection of Teaching Instructor

The services of Miss Laura Blackburn, Consultant Nurse of the MCH Division of the South Carolina State Board of Health, were secured by request to the South Carolina State Health Officer. The purpose of securing Miss Blackburn was twofold:

1. Teaching principles and practices of midwifery.
2. Teaching nurses ways and means of group instruction for midwife supervision.

### C. Selection of Nurses and Midwives to Attend the Institute

The Director of the Division of Personal Health recommended to the local health officers the following criteria for the selection of midwives to attend the Institute:

1. Under 60 years of age.
2. Able to read and write.
3. Pay own room and board.
4. Remain for entire period of 2 weeks.
5. A complete physical examination, including chest X-ray.

At the same time, a request was made that a nurse from the staff attend the institute from each county sending midwives.

#### D. County Participation

Seventeen counties in the south central area selected 35 midwives who attended this two-week session. These counties were also represented by one nurse each, with the exception of Brunswick and Pender counties. Onslow and Cumberland counties sent two nurses each. Edgecombe and Halifax counties, both outside of this geographic area, by special request sent one nurse each.

#### E. Institute Expenses Paid from MCH Funds

1. Miss Blackburn— honorarium and travel ----	\$421.00
2. 17 nurses per diem for 8 days	773.00
3. 4 midwife group leaders— living expenses -----	60.00
4. Head group leader— honorarium -----	40.00
5. Supplies and other expenses	100.00
Total -----	\$1,394.00

No attempt has been made to make a total cost analysis including everyone involved in this program.

### III. Program Content

A. Credit is due Miss Blackburn for the content of the teaching material. This covered in detail the maternal cycle, emphasizing the responsibility of the health department, the nurse and the midwife for the total care of the patient. A record was kept on each midwife, a copy of which is filed in the MCH Section at the State Board of Health. The original was sent to the local health department of the county of residence. A certificate of attendance was given to the individual midwife.

#### B. Supporting Services of the State Health Department

Special lectures were given on health education, nutrition, oral hygiene, sani-

tation and vital statistics by representative members of the respective sections of the State Board of Health.

#### C. Supporting Service of Local Health Departments

Much credit is due Dr. M. T. Foster, Cumberland County Health Officer, his staff and one local obstetrician for active participation in the institute itself.

### IV. Some Observations Following This Institute

A. Eleven counties have held quarterly meetings, with a planned program of group instruction including all midwives in the county.

B. The midwives who attended the institute have actively participated in demonstration of procedures for patient care in these group classes.

C. Instruction materials used at the institute have been used by these counties throughout the year, with Miss Blackburn's consent.

D. Four counties held two meetings for group instruction during the year.

E. Two counties did not carry on any planned program.

F. The health officers and nurses of local departments have expressed the opinion that the quality of work of those midwives who attended the institute has shown much improvement.

### REPORT—1953

#### I. Some of the Factors in Planning a Special Program

A. As one of the results of the Midwife Institute in 1952, a committee was appointed from the state and local Health Departments to study and plan a similar program for 1953. The following recommendations were made by this committee:

1. Revision of all material related to midwife supervision and control.

2. Preparation of manuals of teaching materials.

3. Another institute for teaching should be held in this same area, similar to the one held in 1952.

4. Nurses from the local area would be selected to teach the classes.

5. Small groups of midwives for class instruction.

### B. Administrative Procedures

These recommendations were submitted to the Directors of the Divisions of Personal Health and Local Health Administration of the State Board of Health. Permission was given for planning a second institute provided the total expenses did not exceed \$500.00. This limitation was due to the reduction of funds. The Fayetteville State Teachers College had already offered their facilities for this purpose.

### C. Results from the Committee Recommendations

1. The MCH and Nursing Sections of the State Board of Health, a selected group of nurses, health officers and obstetricians from the local Health Department prepared suggested changes of all materials for midwife supervision and control. With the assistance of personnel from the Children's Bureau, the final drafts were prepared and presented to the State Health Officer for approval by members of the State Board of Health.

2. Careful review of all materials for teaching midwives was done, and manuals were prepared of detailed lesson outlines, using as many illustrations as possible. These manuals were prepared for both nurses and midwives. The lessons on nutrition and vital statistics were prepared by personnel of these sections of the State Board of Health.

3. Four public health nurses, who attended the institute in 1952, were asked to teach the midwife classes. One of these was a nurse-midwife, and the other three had shown a great deal of interest in group teaching and supervision. A letter was written by the Director of Personal Health to the respective health officers asking if these nurses might be released for this work.

4. It was decided that the groups should be limited to 15 midwives each, and the total enrollment should not exceed 60. The purpose of having small

groups was that each midwife would have more opportunity to practice under close supervision in all the demonstrations given.

## II. Selections of Facilities and Attendance at the Institute

The President of Fayetteville State Teachers College was contacted for dates and arrangements of facilities on the same basis as was planned in 1952. The selection of midwives to attend the institute was the same as described for the 1952 program. The nurses did not attend because of the shortage of funds, except by special request.

### A. County Participation

There were 57 midwife applications received, and of these, 48 were registered; which represented 15 counties in the south central area. Two of the midwives were unable to remain for the complete course because of illness, and Certificates of attendance were given to 46. Edgecombe County, located in the northeastern area, was represented by one midwife.

### B. Institute Expenses Paid from MCH Funds

1. 4 nurses—	
per diem for 8 days -----	\$183.00
2. 5 midwife group leaders—	
living expenses -----	75.00
3. Head group leader—	
honorarium -----	50.00
4. 4 group leaders—	
honorarium -----	160.00
5. Supplies and other	
expenses (approximate) ----	75.00
Total -----	\$543.00

## III. Program Content

The manuals of lesson plans, prepared by local and state personnel, were used by the teachers. It was considered important that the same sequence of lessons and demonstrations be taught the four groups at the same time. Some confusion was found among the midwives when this plan was not carried out. It was also considered important that the teachers plan together the activities of their groups so that the midwives would all have

the same kind of experiences. The duties and responsibilities of the group leaders were clarified with the teachers, midwives and director of the institute. A detailed daily schedule was worked out in order to provide sufficient time for classes, demonstrations, special lectures and films. The same type of record and certificate of attendance for each midwife was used as in 1952.

#### *A. Supporting Services of the State Health Department*

The State Health Officer, Directors of the Divisions of Local Health Administration and Oral Hygiene visited the institute and spoke to the midwife group. Special lectures were given on sanitation and vital statistics by members of the respective sections of the State Board of Health. Two nutritionists from the Nutrition Section spent the entire time observing the total program, and taught four lessons in nutrition to each group. The film "All My Babies" was used as a teaching tool. This was shown on two different occasions and followed by group discussion.

#### *B. Supporting Services of the Local Health Departments*

Much credit is due the health officers who released nurses from their staffs to teach these classes. Dr. M. T. Foster, Cumberland County Health Officer, acted as an advisor and consultant for the institute. A local obstetrician gave a special lecture on prenatal care.

#### **IV. Some Observations Following this Institute**

Insufficient time has elapsed to completely evaluate the results of this institute, but the following are some of the comments from people who participated in the program:

1. The teachers felt that with the small groups they were able to do more effective supervision of the midwife practice work.

2. The lesson plans were helpful for covering in detail the content needed in each class session.

3. The opinion was expressed that the

lesson plans would be helpful for any staff of nurses to organize and conduct a continuous midwife teaching program.

4. The midwives appeared to be very grateful for the opportunity of this experience, and asked that they be permitted to attend future institutes.

5. The midwives said that they intended to work harder in their own county groups to stimulate the other midwives to do better work.

6. Some changes in schedules might be worked out that would prevent any break in the continuity of demonstrations and practice periods for midwives in future institutes.

7. Several outlines of midwife teaching programs should be presented at the next health officers' meeting.

#### **Conclusion**

The total number of midwives attending the two institutes represent 32 per cent of the midwives in the south central area, which had a total registration of 277 in 1952. Since this number has been reached by this type of instruction, it will depend on the local health departments as to how long this type of teaching program should be continued. Thirty-three midwives have either died or been retired since 1952 in this area and, on the basis of this, there would be a predictable number expected to become inactive yearly. The accurate roster for 1953 showing the age ranges of practicing midwives gives a better picture of what to expect in the future. The training of new midwives remains a small part of the program since, generally, these are few in number and there is little interest among the younger age groups for this type of work. It would appear that for the south central area problem, if the institute type program were continued, within a three or four year period all of the eligible midwives would have had an opportunity to attend such an institute. It would remain a regional or county department decision as to whether or not the midwife would be required to return for instruction on a periodic basis. It would also be neces-

sary that nurses from different departments assume the teaching responsibilities, and the type of continuous supervision given on the local level would be an administrative decision resting with the health officers.

\* \* \*

It is recognized that the institute type of program may not meet the needs of other areas of the state. It has been suggested that a workshop be planned for teaching nurses the outlines for teaching and supervising midwives. This, of course, would involve less time, and would reach a greater number of nurses at less expense if it were done on the local level. It is agreed that the main objective is to strengthen nursing service in the total Maternal-Child Health Program, of which midwife supervision is only a part, needing greater emphasis in some areas than in others.

As the problem has been more fully discussed with local health department staffs, there is some change already evident by increased interest toward improving this area of service. At the present time, some staffs, other than those in the south central area, have undertaken regular class meetings with their midwives, others have increased the content of teaching by making use of the lesson outlines in the manuals. There are ten such programs already underway and plans are being made with other staffs.

The impressions gathered from many conferences in local health departments indicate that there may be several plans to be considered. As suggested, it might be advisable that these be presented at the health officers' meeting for their discussion and approval of what would meet the individual department needs. The following plans are presented in brief outline as suggested methods.

#### Plan I

a. Summer institute type of teaching program be continued at Fayetteville State Teachers' College.

b. Health officers in this area to release nursing personnel on a rotation

basis to teach these classes, with assistance from the consultant nurses of the area and the Maternal and Child Health Section.

c. Decision to be made on frequency of attendance of midwives at institute to obtain permit to work.

d. If state funds are not available, local responsibility to assume cost—this to be kept at a minimum.

e. Whether or not this institute should be made available to other midwives in the state should be determined.

#### Plan II

a. The nursing staff in the local health department to plan regular meetings with the midwives for teaching principles and practices of midwifery.

b. Frequency of meetings to be determined by the total program of work.

c. Lesson outlines as prepared in the manual to be followed.

d. The midwives to participate in planning the program and objectives to be reached through this type of group work.

e. Services of the consultant nurse and MCH Section to be available to aid the nursing staff to carry out this program.

f. The consultant nurse with the MCH Section to help the nursing staff prepare and teach the classes on delivery.

One or more adjacent counties might plan to combine the delivery period classes, which would take at least three days for the demonstration and practice periods. This would involve planning for suitable quarters, transportation and nurses being released to teach. It would also be necessary that the same sequence of instruction had been carried out in the local meetings. This has the advantage of strengthening the nurse-midwife relationship, since the nurses would be more closely identified with the actual teaching of the midwives in her county. Also, the content of the lessons would become more significant as the nurse continued to follow and evaluate the results of her classes with the midwives.

### Plan III

Some of the areas in the state have so few midwives that two or more counties might plan to combine their total teaching program. These classes might meet on a quarterly basis, taking into account the special problems involved in regard to work, such as tobacco season, harvesting, transportation, etc.

This might also show special advantages of increasing the midwife's awareness of how she functions in the health department program, closer association with the nurse who is responsible for the continued supervision, and some increased knowledge of the problems in the adjoining counties.

It might also be possible to bring several of these smaller groups together for an annual meeting. The annual one-day meeting held in some areas as the present time constitutes a problem of considerable importance in travel. Those areas have indicated, in some instances, a preference for small group meetings.

### Plan IV

Institutes or workshops to teach nurses how to conduct classes for midwives. This would not be a review or course of obstetric nursing, but effort would be made to help the nurse increase her effectiveness in group teaching. These workshops should be planned on:

a. Local level.

b. Include the total nursing staff in a department. This is important since it would insure that all the nurses understood and taught the same procedures and techniques.

c. Several small staffs could be combined for one workshop.

d. The time involved would be from 3-5 days, depending on what the departments could plan.

e. This would reach a greater number of nurses who might not be able to be released from their regular duties for a two-week institute or special course at the University.

f. The teaching content would be

the responsibility of the consultant nurse of the area and the consultant nurse from the MCH Section.

g. No cost would be involved in this, other than transportation of those nurses to whatever department was selected for the classes.

\* \* \*

As the total picture of midwife service in North Carolina is more closely studied, some fairly obvious points are brought out that would affect any type of long range program. There has been a decided decrease in the percentage of deliveries attended by midwives in each county since 1940, with the exception of Lincoln, Mecklenburg and Perquimans, each of which shows a slight increase in comparison of 1940 with 1952. Although the south central area has the greatest number of midwife deliveries in the state, the percentage by county shows that the north central and northeastern areas are higher. This might indicate that some of the counties showing the highest percentages need to be selected for special study. However, as the midwife deliveries are studied by county, there is some increase shown in several counties previously having a much smaller problem. It is, of course, essential that each health department be aware of what changes may be taking place within their county, and should such an increase be consistent yearly, the factors would bear close study.

It was stated earlier that the number of midwives in the south central area had shown a considerable decrease in number in one year. All the counties in the state were especially requested this year to complete the registration blank giving the age of the midwife registered. This was needed to determine what might be expected in retirement or death for the whole state. Although the annual reports had shown there were 915 registered midwives in 1950 and 826 in 1952, it was thought the actual number now practicing might be considerably less, if the percentage of retirement in the south central area was consistent throughout the state. By the end of December

1953, one hundred counties returned the registration forms, showing there are 663 midwives practicing in the state.

As the age range of these midwives is studied it is apparent that there will be a considerable decrease in number within the next few years, since the percentage of those above the age of 70 is almost as great as that below 50. There has been no indication of special recruitment except in one or two specific instances where the need has been apparent; nor does such appear to be a major objective. More concentrated supervision will be needed for those midwives in the 45-65 age

range.

All indications point to increased medical care in obstetrics, but, at the same time, there is reason to believe that the service of the midwife will be used in some areas for some time. It seems logical that as all counties provide hospital facilities, the next emphasis should be on community effort to make medical and hospital care available for all the maternity population. In the meantime, this group of midwives, who contribute to the service for people, need to receive stronger and more concentrated supervision and instruction.

## NOTES AND COMMENT

By THE EDITOR

**INFANT AND MATERNAL MORTALITY**—In the May issue of *The Health Bulletin* we are again carrying the statistical story of Infant and Maternal Mortality in the Nation and in North Carolina. On page 15 you will find information concerning the number of births in each of the forty-eight states for the year, 1951; the number of infant deaths mortality rates; and the number of maternal deaths and maternal mortality rates. For the first time the Maternal Mortality Rate is given as the number of maternal deaths per 10,000 live births. Since maternal mortality rates have been lowered markedly in the last several years, the rate per 10,000 enables us to deal with whole numbers instead of small fractions.

On page 16 we give comparable data for each of the 100 counties in North Carolina for the year 1953. These North Carolina figures are provisional but are essentially correct. The official figures will be somewhat different due to the fact that some birth and death certificates are submitted late; that is,

after the date on which they should legally be reported. The Infant Mortality rate for the United States in 1951 was 28.4; North Carolina's rate for that year was 32.7. Thirteen other states had worse rates than North Carolina; the worst rate in the country was that of New Mexico—55.4. Alabama, Arizona, Colorado, Florida, Georgia, Kentucky, Mississippi, Nevada, South Carolina, Tennessee, Texas and Virginia also had rates higher than North Carolina's. There is little comfort, however, in the realization that we are keeping bad company. The Maternal Mortality rate for the nation in 1951 based on 10,000 live births was 7.5; North Carolina's rate was 11.1. Only seven other states in the union had higher maternal mortality rates than North Carolina. Mississippi's rate was the highest with 20.9; Alabama's being with 19.3. Arkansas, Florida, Georgia, New Mexico and South Carolina were other states with rates higher than North Carolina. Again we gain little comfort in being classified with states having such high maternal mortality rates.



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Geo. Curtis Crump, M.D.....	Asheville
Mrs. J. E. Latta.....	Hillsboro, Rt. 1

## EXECUTIVE STAFF

J. W. R. Norton, M.D., M.P.H., State Health Officer  
 John H. Hamilton, M.D., Assistant State Health Officer and Director  
 State Laboratory of Hygiene  
 C. C. Applewhite, M.D., Director Local Health Division  
 Ernest A. Branch, D.D.S., Director of Oral Hygiene Division  
 A. H. Elliot, M.D., Director Personal Health Division  
 J. M. Jarrett, B.S., Director Sanitary Engineering Division  
 Fred T. Foard, M.D., Director Epidemiology Division

## FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
Malaria	Venereal Diseases	

## SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine) monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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# THE Health Bulletin



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## A CENTURY OF MEDICAL LEADERSHIP IN PUBLIC HEALTH IN NORTH CAROLINA

By J. W. R. Norton, M.D., M.P.H., F.A.C.P.\*

Raleigh

The separate customary detailed report of public health activities is submitted for your consideration. Few realize how fortunate North Carolina is that medicine, dentistry, pharmacy and other public representatives work together on our state and local health boards to assure sound policies and practices in our public health activities. We have been most fortunate in having dedicated unselfish service from members of the State Board of Health particularly from Presidents of the Board throughout from the first, Dr. S. S. Satchwell, to the present, Dr. G. G. Dixon. Two other Board members who should be mentioned by name are Dr. Hubert B. Haywood and the late Dr. H. Lee Large. These board members who belong to this Society have always been among our ablest and most public-spirited.

No governmental board, commission or committee works so closely with organized medicine and dentistry as your State Board of Health. Nine of the ten previous Board Presidents and five of the six previous Secretaries have served as President of the State Medi-

cal Society and all four of the dental representatives of the Board have served as President of the State Dental Society.

Throughout this Century which we celebrate, our state and county medical societies have provided unselfish leadership in determining, promoting, and providing health services. We take pride in the "firsts" accomplished and the fact that we have always been at, or near, the "head of the class" in health work.

The development of legal authorization for health work is interesting and extends from the provincial law of 1712 applicable to port quarantine and the earliest municipal charter provisions of colonial days. The entire State Medical Society constituted the State Board of Health in 1877 with action through a committee and the entire County Medical Society at the beginning in 1879 was the County Board of Health. These board patterns similar to those of today were formed in 1879 and 1911 respectively. The municipal boards began development in 1893 and the district pattern in 1935.

From the organization and legal establishment of the State Board of Health, the twelfth in the Nation, in 1877 until 1909 the board members and the State Health Officer received

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\*Secretary-Treasurer of the State Board of Health and State Health Officer.

no pay or even reimbursement for their many useful and pioneering services. Dr. Thomas F. Wood (1877-1892) and Dr. Richard H. Lewis (1892-1909) supplemented from personal funds the meager state appropriations of those first 32 years. Both were recognized national leaders in the public health field. In 1908 Dr. Lewis arranged for Dr. Clarence A. Shore to become full-time Director of the Laboratory of Hygiene. Dr. Lewis, the next year, proposed and obtained a larger annual state appropriation of \$10,500 as a sound investment in health and stepped aside for his successor, Dr. W. S. Rankin, who served as our first paid and full-time State Health Officer. The Conjoint Session Reports, the Monthly Health Bulletin, the Biennial Reports, and the educational pamphlets for this period confirm the foresight, energy and dedication of Drs. Wood and Lewis.

Dr. Watson S. Rankin (1909-1925) and Dr. Carl V. Reynolds (1934-1943) served as State Health Officers with distinction in promoting health for the state and nation. Though serving for relatively short periods, Dr. Charles O'H. Laughinghouse (1926-1930) and Dr. James M. Parrott (1931-1934) crowned successful medical careers in private practice with devoted and progressive service in public health.

We have also been most fortunate in the able and devoted services of state and local staff workers. Several have given their entire careers of twenty to thirty years or more to public health work, local and state. One hesitates to mention any without being able to mention more of these faithful and devoted health workers. The following, therefore, are mentioned as typifying this host of staff workers whom we honor at this time: Dr. G. M. Cooper, Dr. Clarence A. Shore, Mrs. H. P. Guffy, Dr. John H. Hamilton, Dr. E. A. Branch, Dr. E. R. Hardin and Miss Mae Reynolds.

Guilford established one of the first county health departments in the country in 1911. Robeson County in 1912 provided the nation's first strictly rural county health department. Ex-

tension of this vital service was gradual until all 100 counties were included in 1949 as one of the first, and still among the few, states to provide full coverage to all its citizens through essential preventive public health service. Many states are still depending on a centralized staff in the state capital and with little or no local development in the public health field. Only through sound local health departments can public health services be most effectively and economically provided and both the voluntary agencies and private individual citizens channel their health efforts most efficiently. The local health department so well pioneered in North Carolina coordinates all official and non-official efforts and is the logical agency to provide essential generalized health services and also through which to develop investigations or try out new specialized health services. In North Carolina we have greater local autonomy than any other state.

Dr. Richard H. Lewis and Dr. G. M. Cooper played particularly vital parts in North Carolina's public health development. Dr. Lewis prepared and gave wider distribution to special health information pamphlets. He obtained the appropriations and employed the first full-time staff workers and arranged for the first full-time State Health Officer.

While still in Sampson County, Dr. Cooper, in 1911-1912, used typhoid vaccine for the first civilian mass prevention and control of the disease. In 1914, with the aid of the International Health Board, he inaugurated community sanitation programs at Salemburg and Ingold. After joining the staff of the State Board of Health in 1915 his plan for dental services for children in the schools was started in 1918, and the system of organizing selected rural school groups for removal of diseased tonsils and adenoids began in 1919. The small able group of nurses aiding Dr. Cooper in the prenatal and child health work were pioneer missionary health leaders, teaching expectant mothers, midwives, school teachers and pupils, and inspiring development of

good local health departments. In 1937 Dr. Cooper was a leader in starting the first State Health Department planned parenthood program in the United States. All these pioneering ventures of Drs. Lewis and Cooper confirm through their enduring helpfulness the wisdom and foresight of these leaders.

Public health dentistry, started by Dr. Cooper, has developed rapidly under the leadership of Dr. Ernest A. Branch. In 1919 North Carolina followed Virginia as the second state to have a dentist on the State Board of Health. In 1931 we became the first state to require a dentist (if available) on the county board of health, and the same year this state became the first to establish a Division of Oral Hygiene with a full-time Dental Director. The "Little Jack" puppet show was started in 1935 and has been a vital health education service through the shows and through school and personal letters. The first Institute for Public Health Dentists began at Chapel Hill in 1936 and in 1941 the only Oral Hygiene Building of a State Health Department was completed.

North Carolina, with its healthful climate, has long been a leader in the treatment and control of tuberculosis and hospitals were built early in the setting of our lovely mountains or nestled among our eastern long leaf pines. Our state and local health department staffs work toward prevention and early case finding. Our public health nurses have aided private physicians in home supervision while the patient was awaiting hospitalization and have provided similar service to prevent a breakdown following hospitalization. It may be added, parenthetically, that similar health services are since 1949 provided in cooperation with our mental health system. Cooperative nutrition services have been provided to all state institutions and the State Health and Agriculture Departments have worked together in improving milk and other foods. North Carolina led the country in freeing cattle of tuberculosis (1928) and brucellosis (1942). Our public eating places and public foodhandlers

are more carefully supervised and are recognized leaders for the entire country. The safe drinking water and milk and the assurance of safe and attractive food in our public eating places have played a substantial part in the economic development of our state.

The history of the development of control of communicable and non-communicable diseases is most interesting, though at times embarrassing in that so little was earlier known of dependable methods. Fumigation and quarantine were first emphasized and then discarded. Little cooperation was obtained with first attempts at reporting, for instance the appeal to report diphtheria in 1880 and the law of 1881 requiring reporting of vital statistics at tax listing time. Early attempts at smallpox and typhoid immunizations met with indifference or opposition. Public health has changed and improved just as has private practice. More recently with the communicable diseases under relative control, except tuberculosis and the venereal diseases, attention has been shifted to cancer, diseases of the heart and blood vessels, diabetes, obesity, mental disorders and accidents. Several counties have developed cancer control services. The first county health department to inaugurate a continuing diabetes control program was our own Harnett in 1946 and now has over 600 cases under supervision; and, Cumberland last year started an organized educational program against overweight. Joint programs with other state agencies have been developed in school health, home and field accidents, highway crash injuries, in addition to tuberculosis, brucellosis and mental health, mentioned previously.

We look with pride and appreciation toward the past and we are sincerely grateful to state and county medical societies for their unselfish and progressive leadership and participation in the provision of public health services. Your understanding and influence are needed in preventing the break-up of the fine local-state-federal support plan under which so much sound pro-

gress has been made. Preventive and curative medical and health services adequate in quality and quantity provide our best assurance of continuing progress and represent the principal bulwark against crackpot plans that would take us backward. The drastic and precipitous cut in federal support announced after our last legislature adjourned for two years has thrown an undue hardship on local appropriating bodies and in 1953 caused a reduction in trained health workers of 28 in the state and 32 in the local staffs. The federal government has responsibilities in national defense—military and civil—in preventing interstate spread of disease, in minimizing the health hazards from interstate travel and shipment of water, food, plants and animals. The state and local health departments are not being adequately reimbursed for services in these areas of federal responsibility. Further cuts could open the way for medical and health emergencies that would cost many times as much to bring under control as to prevent.

A final thought is for the future. We have a state and two national com-

mittees for study and recommendations on government reorganization, and the Presidents Commission on Intergovernmental Relations. With your informed leadership these committees can prove constructive in medical and health services; without it they can lead to confusion and possibly prove disastrous. The implications of these governmental reorganization committees are subtle and far-reaching. Let's ask questions, become constructively informed, get in on the planning, and see that recommendations affecting us are sound.

This Centennial recognition of past achievements is fitting. We pause to express our deep gratitude to those who, named or unnamed, have smoothed the way to further progress. They pointed to better things and led the way. They did not, however, give their last full measure of devotion merely that we might bask in reflected glory—but rather in the hope that from the momentum they generated we might, with similar devotion, be able to do greater things. With humility, with eagerness for unselfish service, with intelligence and alertness, may we dedicate ourselves to the new century.

## DEPARTMENTAL REPORTS

North Carolina State Board of Health  
January 1, 1953-December 31, 1953

### CENTRAL ADMINISTRATION—J. W. R. Norton, M.D., State Health Officer

The affairs of the Central Administration are carried on under the direct supervision of the Secretary and State Health Officer. Under the present plan of organization, the executive duties are performed by that official who is the Director. In Central Administration, we find the work carried on by the public relations official, central files, personnel, central mailing room, multi-lith, and budgets.

During last year, the public information officer continued to prepare and release official news items and to conduct weekly radio programs. The news items are gathered from the various

divisions and sections and when matters of policy are involved, these are passed on directly by the State Health Officer. The material for radio scripts, which are transcribed for use in free time at Station WPTF each Wednesday, for future use, deals with various activities of the State Health Department and have an additional free weekly outlet through the following additional stations: WSJS, in Winston-Salem; WWNC, in Asheville; WMIT, Clingman's Peak; WCEC, Rocky Mount; and WFNC, Fayetteville. The scripts are designed to give information to the public. The present radio series has been carried on for the past sixteen years.

In the central files, last year, 200,495 records were received for filing and 39,703 searches for material and information were made. Fifty-four new medical and public health books were received. Sixty journals are subscribed for annually, with twenty of these bound for permanent keeping.

The mailing room last year distributed 1,414,166 pieces of literature. Copies of The Health Bulletin, numbering 720,000, edited by Dr. John H. Hamilton, were mailed monthly to the more than sixty thousand persons on the list. During the year, 3,653 new names were added to The Bulletin's mailing list, while 1,774 names were removed and 1,130 addresses changed. Material sent out from the mailing room represented all the divisions and sections which comprise the State Health Department.

During the year, the Department of Maternal and Child Health mailed out 13,391 pieces of literature on prenatal care, and 20,480 "Baby Coming" leaflets. There were also mailed out 24,466 pieces of literature on infant care, and 74,900 feeding charts, in addition to other material on infants and children. During the period covered by this report, there were 16,848 shipments of silver nitrate, with five ampules to the box. Various other supplies were mailed, including those going to midwives and others.

The number of copies printed on the multilith machine last year totaled

3,162,480. The folding machine took care of 98,750 and the cutting machine 964,450. The total number of copies padded was 701,416.

The Personnel Section reports that, during last year, there were, within the State Board of Health, 107 appointments, 122 separations, 46 re-classifications, the majority of which included salary increases, 214 salary increments, 18 other salary increases, and 28 employees certified as permanent. As of December 31, 1953, there were 323 employees of the State Board of Health and 13 vacant positions. This represented for the calendar year a decrease of 28 employees.

In the local health departments, there were 265 appointments, 310 separations, 94 re-classifications, 941 salary increases, and 125 employees certified as permanent. As of December 31, there were 1,087 employees in local health departments and 48 vacant positions. This represents a decrease of 32 employees for the calendar year.

The amount of sick leave earned by local employees was increased from ten to twelve days a year. The maximum vacation leave accumulation for state employees was reduced from forty-five to thirty days.

Following is a comparative statement of amounts budgeted for the fiscal years 1951-'52 and 1952-'53. The figures for both years are given in order that adequate comparisons might be made:

	1951-52	1952-53
State -----	\$2,245,330	\$2,322,048 (includes misc. receipts)
Federal -----	2,292,645	2,233,484
Special Accounts -----	122,951*	120,985*
Local -----	3,409,371	3,643,581 (From Public Health Ser. budgets)
Totals -----	\$8,070,297	\$8,320,098
State vouchers -----	16,474	17,323

\*Special Accounts include:

- Bedding
- Dental
- Kellogg
- Reynolds
- TVA—county
- Indian Service—county

June 30 Encumbrances not included, as they were included in previous year's budgeted figures.

Rapid Treatment Center not included, though that is in the Public Health Service Budget.

The difference in Federal Funds for the two years is not so great for the reason that while Public Health Service funds were reduced, Children's Bureau funds were increased.

#### **EPIDEMIOLOGY DIVISION—Fred T. Foard, M.D., Director**

In addition to the six former sections of the Division of Epidemiology which existed in 1952 (Public Health Statistics Section, Communicable Disease Control Section, Tuberculosis Control Section, Industrial Hygiene Section, Venereal Disease Control Section, Veterinary Public Health Section), the Division completed the calendar year 1953 with one new section under its administrative jurisdiction—the Accident Prevention Section, charged with the responsibility for carrying out a home and farm accident prevention program in the state.

Two other project responsibilities added to the programs already under this Division were (1) The collection of reports on crash automobile accidents, in cooperation with the North Carolina Department of Motor Vehicles and Cornell University Medical School; and (2) The collection of reports on narcotic addiction.

During 1953, Dr. Charles M. Cameron, Jr., upon completion of one year of post-graduate study at the School of Public Health, University of North Carolina, joined the Division staff and was placed in charge of the Communicable Disease Control Section and the Accident Prevention Program. Under an agreement with the Kellogg Foundation, sponsors of the home and farm accident prevention program, Dr. Cameron is devoting two-thirds of his time to the direction of this work and one-third to the supervision of the Communicable Disease Control Section. To assist him in necessary field investigations in the control of communicable

diseases, a medical officer from the Communicable Disease Center of the U. S. Public Health Service, Dr. Jesse G. Smith, Jr., was assigned to the North Carolina State Board of Health for the period July 1, 1953 through June 30, 1954.

The major problem of the Division during the year was providing assistance in the administration of gamma globulin on a mass scale in three counties (Catawba, Caldwell, and Avery) in which poliomyelitis occurred in epidemic form. A total of 30,500 children under ten years of age in these counties received gamma globulin. Other field activities requiring special investigation during the year are covered in the Section reports herein.

The state-wide study of the prevalence of North American blastomycosis was continued through the last half of 1953 in cooperation with the Duke University Medical School.

The year 1953 also saw the enactment of regulations governing the shipment of non-sterilized goat hair into North Carolina for manufacturing purposes. This was the result of an anthrax problem requiring considerable attention in Union County, North Carolina, which is reported by the Veterinary Public Health Section herein.

Activities of each of the sections are briefly outlined below:

#### **Public Health Statistics Section**

This Section performed practically all of the statistical services for the State Board of Health in 1953. This involved the collecting, processing, tabulating, and analysis of various activities for the health programs carried on by twelve sections of the department. In addition, special studies were continued or begun for various health and medical groups. Agencies participating in these studies included the American Medical Association; American Dental Association; the Maternal Welfare Committee and Anesthesia Study Committee, N. C. Medical Society; three state medical schools; School of Public Health, University of North Carolina; Motor Vehicle Department; Cornell University Medical College; National Office of



Vital Statistics; Children's Bureau.

During the year 114,724 regular and 19,500 delayed births, 32,254 deaths, and 2,330 stillbirths were recorded. All indications point to an all-time high in number of births for the year. In 1953, 35,087 certified copies were issued and 10,309 verifications were made in order to prove the fact of birth or death. There were 1,061 legitimations and 1,402 adoptions processed during the year that resulted in new birth certificates being made.

Resident birth and death certificates received for 1953 indicate that the crude birth and death rate will be slightly lower than in 1952. The provisional rates based on all certificates of residents received in 1953, with no regard to year of occurrence, are 26.9 live births and 7.6 deaths per 1,000 population.

Since 1925, heart diseases have ranked as the leading cause of death. Each year a greater proportion of all deaths is due to this cause. In 1925, the heart disease death rate was 123.5 per 100,000 population; in 1953 the provisional death rate from this cause was 255.6. The other leading causes of death, with provisional rates per 100,000 population for 1953 were:

Cause	Number	Rate
Vascular lesions -----	4,162	98.6
Cancer -----	3,572	84.6
Influenza and pneumonia --	1,535	37.5
Nonmotor vehicle accidents	1,280	30.3
Motor vehicle accidents ----	1,185	28.1
Immaturity -----	881	20.9

The provisional infant death rate was 33.0 per 1,000 live births in 1953. The provisional maternal mortality rate was 1.0.

In promoting registration of vital events, administrative contact was maintained with registrars, doctors, midwives, undertakers, registers of deeds, hospitals, and health department personnel. In an effort to improve registration of certificates as to promptness and completeness, tabulations by attendant, showing time-lag in filing, were made for the counties with the worst records. Fifteen additional counties were consolidated, with the health

officer serving as local registrar for the collection of all vital events, making a total of sixty consolidated counties. The remaining forty counties are served by town and township registrars. Ultimately, it is hoped to consolidate all of the 100 counties in the state.

Communicable Disease Control Section

In 1953, in an endeavor to meet, more adequately, the growing need for the important service of communicable disease control, this Section was reorganized by the following steps:

(1) Establishment, for the first time in the history of the State Board of Health, of a position of Chief of the Communicable Disease Control Section. On April 1, 1953 this position was filled by a qualified and trained public health physician, a former commissioned officer of the U. S. Public Health Service. In addition to directing communicable disease control activities, this physician is in charge of the Accident Prevention Section in this Division.

(2) Procurement of a field epidemiologist on loan from the U. S. Public Health Service. A member of the Epidemic Intelligence Service of the Public Health Service was assigned to the State Board of Health, effective July 1, 1953. His assignment will terminate June 30, 1954 and it is hoped that a replacement will be available to the Section by the Service.

(3) Transfer of the morbidity reporting unit from the Public Health Statistics Section to the Communicable Disease Control Section. This unit, charged with the responsibility for the collection and tabulation of physicians' reports of contagious diseases, can serve to supply up-to-date information on communicable disease trends and enable a more intelligent control program.

(4) Prior to 1953, communicable disease reports to health departments and other interested or concerned agencies were distributed on a monthly basis. To afford information of epidemiologic significance, reports were converted to distribution on weekly basis.

During the summer of 1953, the Section, in collaboration with the office of

the Division Director, assumed full administrative control for the operation of mass gamma globulin clinics in three North Carolina counties. A scientific paper, prepared by the Section Chief and based on the clinic operations, appeared in the November 1953 issue of *Public Health Reports*, one of the leading public health journals.

A detailed follow-up of North Carolina poliomyelitis cases was conducted by the Section as a participant in the nation-wide evaluation study of gamma globulin as a poliomyelitis control measure. Special field studies were conducted on blastomycosis, psittacosis, infectious hepatitis, typhoid fever, meningitis, and other conditions.

#### **Veterinary Public Health Section**

This Section has the responsibility for planning, supervising, and coordinating activities designed to eradicate or control animal diseases which are communicable to man either by contact or, indirectly, through food products or insect vectors. The duties of the public health veterinarian may be divided into two phases:

*General.* (1) Participation in developing general improvements in public health; (2) Assistance in administering the general health program.

*Special.* (1) Promotion of veterinary public health activities to eradicate animal diseases transmissible to man; (2) Advice and consultation to other divisions of the State Board of Health regarding veterinary public health problems; (3) Enlisting the cooperation and soliciting the support of private veterinary practitioners in public health problems; (4) Providing professional consultation and liaison with voluntary and official state and local agencies; (5) Administrative duties: (a) Regulatory: Review of all regulations pertaining to veterinary public health that are subject to revision; (b) Miscellaneous: Preparation of educational pamphlets, spot maps, graphs, reports, and handling of correspondence; (6) Teaching: The Section Chief gave several lectures during the year on veterinary public health at the School of Public Health, University of North Carolina,

at Bowman Gray Medical School, and at Duke Medical School. Various talks were also delivered before civic clubs in North Carolina.

Examples of Section activities during 1953 included the following subjects:

1. *Rabies.* This is a serious public health problem in North Carolina. Much time was spent working with local health departments in developing a uniform state rabies control program.

2. *Anthrax.* Investigation, by the Section, of a human case of anthrax in a textile mill revealed the plant to be greatly contaminated with anthrax spores. The textile plant was found to be using raw infected goat hair in manufacturing men's and women's clothing. In addition to the public health danger, there was the danger of the organisms infecting the livestock of the state through wastes discharged from the plant into streams, and the possibility of employees carrying the infection on their clothing to the farms where they lived. After several conferences with officials of the State Agriculture Department and with Federal health and agricultural officials in Washington, D. C., a bill was introduced into the 1953 General Assembly and enacted into law, requiring all raw material infectious for humans and livestock to be sterilized before importation into North Carolina. The plant was closed temporarily until it could be thoroughly disinfected.

3. *Psittacosis.* Investigation, by this Section, of suspected cases of human psittacosis in North Carolina has revealed several laboratory confirmed cases, and the virus has been isolated in an aviary selling parakeets. An educational program is now being carried out by the Section in order to inform bird dealers and owners of parakeets regarding possible dangers.

4. *Leptospirosis.* Investigation of several reported cases of human leptospirosis in several counties has revealed that this disease is quite prevalent. Blood specimens taken from dogs, rats, cattle, and mules have been found to be positive for various species of leptospira.

5. *Abattoir Inspection.* Advice and consultation have been given to many local health departments regarding the establishment of adequate meat inspection. Local veterinarians perform this inspection under supervision of the local health departments. Many counties still do not provide this important public health service.

#### **Tuberculosis Control Section**

During 1953 community-wide or mass surveys, using four mobile x-ray units, were completed in eight counties. Special surveys using one to two mobile x-ray units, were conducted in thirty-four communities. During these surveys special groups selected by health officers were x-rayed, also state mental institutions, the Central Prison, colleges, and industrial plants.

The Section's mobile units examined 245,957 persons during the year. This was an increase of 17,245 persons as compared to 1952. In addition 21,106 x-ray examinations were made by the Section units on loan to Duke Hospital in Durham, Baptist Hospital in Winston-Salem, and Union Memorial Hospital in Monroe. Also 18,147 miniature films were read at the central office for counties. During follow-up activities, the Section's follow-up clinics made approximately 8,500 14x17 films in connection with surveys and therefore the grand total of x-ray films interpreted as a result of the Section efforts was 293,710 films.

Twelve counties have been scheduled for community-wide surveys in 1954. Ten of these have had community-wide surveys previously. The schedule for community-wide and special surveys has been prepared for 1955. Nine counties and one city have requested community-wide surveys for 1956 and five counties have requested special surveys for the same year.

From the time active operations began, on July 6, 1945, through June 30, 1953, 7,721 cases of definite tuberculosis and 3,427 cases of suspected tuberculosis have been diagnosed, or a total of 10,548 persons showing signs of tuberculosis as evidenced by the large or 14x17 x-ray plate. During the

period there were approximately 10,000 cardiovascular abnormalities found as well as other lung pathology.

#### **Industrial Hygiene Section**

This Section is required to carry out the provisions of the Workmen's Compensation Act in regard to occupational diseases. The following is a summary of Section activities for 1953:

*Dusty Trades* (free silica and asbestos hazards):

Plants surveyed .....	76
Counties surveyed .....	21
X-rays taken .....	3,010
Employees issued work cards .....	2,959
Employees refused work cards .....	51
X-rays taken in non-dusty trades .....	9,100
Pre-employment films read .....	1,329
Case histories submitted to Industrial Commission .....	34
Supplements to case histories submitted to Industrial Comm. ....	26
Case hearings attended .....	31
Testimony given .....	24
Testimony not given .....	7
Conferences attended .....	76

Section engineers made 233 inspections and surveys of a wide variety of industrial plants in 1953. A larger part of these investigations concerned the dusty trades. In addition, Section activities included isolated field determinations or appraisal of hazards such as carbon monoxide, cyanide fumes, and chlorinated hydrocarbons. Non-dusty trade inspections included air pollution, x-radiation installations, insecticide manufacture and mixing, rayon manufacture, fertilizer manufacture, lead smelting, asphalt mixing, storage battery manufacture, metal treating, radioisotope handling, fumigation chambers, acid manufacture, and nuclear reactor operation.

#### **Venereal Disease Control Section**

The venereal disease control program showed favorable progress during 1953; however, some phases of the work were reduced and slowed down because of drastic cuts in funds and personnel. More program emphasis was shifted to speed up and streamline the control of infectious syphilis before any extensive foci could get underway. Increased emphasis was placed on in-

interviewing for sexual contacts and rapid contact tracing was employed in all areas. All primary and secondary syphilis contacts were given epidemiologic treatment with 2,400,000 units of penicillin. By treating all contacts of infectious syphilis on epidemiologic evidence, the disposition of contacts was changed from ninety to thirty days. As a result, contacts have been brought in for examination and/or treatment earlier with much less follow-up by field workers. During the past five years, sharp decreases have occurred in total reported primary and secondary syphilis. In 1953, however, this was not true—417 cases were reported in 1953 and 436 in 1952, a decrease of only 4.3 per cent.

During 1952, nationally, private physicians reported 36.9 per cent of all syphilis; in North Carolina only 7.2 per cent was reported by private physicians. In July 1953, therefore, a private physician reporting program was incorporated into venereal disease control. All positive serologies from the State Laboratory of Hygiene were reported to the health officer who, in turn, contacted private physicians. After a thirty-day period, the health officer was notified if the morbidity card had not been received by the Central Tabulating Unit, State Board of Health, or the case had not been previously reported. This method increased reporting to 16.9 per cent in 1953. Seventy-eight per cent of all syphilis reported by private physicians in 1953 was reported July-December.

Four prevention and control centers for out-patient venereal disease diagnosis, consultation, and treatment were in operation at the beginning of 1953, located in the health departments at Wilmington, Charlotte, Durham, and Halifax. In April 1953, the Halifax Center was closed because of a shortage of funds and medical personnel. During 1953 26,724 diagnostic observations were made and, as a result 6,048 persons were found infected and placed under treatment, and 372 contacts received epidemiologic treatment in these centers.

Survey activities continued in 1953. The latter part of the year, the survey group was divided into several small teams, which conducted migrant, industrial, and selected group testing. Also, tuberculosis and venereal disease combined forces in several areas. In 1953 37,762 persons were tested, resulting in a positive rate of 8 per cent. Free venereal disease literature, posters, and movies were furnished local health departments to aid in the educational program, a prime factor in controlling venereal diseases.

The prevention and control center at Durham participated in a research program in which a selected group of early syphilis patients was treated with a single injection of bicillin and follow-up carried out. This program is still in progress.

The gonorrhea problem revealed no evidence indicating its solution. Much less is known regarding gonorrhea incidence or prevalence than about other venereal diseases. It is estimated that unknown gonorrhea cases outnumber known cases at least five to one. There were 17,946 diagnosed and epidemiologic treated gonorrhea cases during 1953.

#### Accident Prevention Section

Foremost among major health problems in North Carolina today are accidents. As a cause of death, accidents are exceeded only by heart disease, blood diseases, and cancer, and as a cause of disability time lost from work, and economic loss, accidents may be ranked as the leading health hazard in the state.

To sponsor a program to reduce the deaths, disabilities, and economic drain resulting from accidents, the Accident Prevention Section has been established in the Division of Epidemiology as the newest section of the State Board of Health. This program was made possible by a grant from the W. K. Kellogg Foundation to the State Board of Health, one of eight state health departments in the United States selected for such grants.

Recruitment of a professional staff for this Section began in September 1953. The Section activities are under

the direction of a Section Chief (who is also in charge of the Communicable Disease Control Section), and other staff members include a consultant public health nurse, a health educator, a consultant sanitarian, and clerical and secretarial assistants.

The Section will welcome and support all types of safety programs—highway, industrial, school, community, home and farm—but the principal focus will be on home and farm accidents, which annually cause 600-700 deaths in this state.

This group will offer consultation services to local health units and communities in formulating and developing accident prevention activities since effective control of accidents is conceived as most effective if conducted on the local level.

The initial step in program development was the collection, analysis, and study of data on all types of accidents occurring in North Carolina. Statistics were available from the State Board of Health and also from six other official state agencies.

The second phase of the program was a study of home and farm accident prevention activities now being performed in North Carolina. More than a score of organizations, agencies, groups, and individuals have been contacted. Relationships have been developed with these groups whereby the Section can assist each organization and, at the same time, obtain their cooperation in forwarding the objectives of the program.

Other activities have included the inauguration of training sessions in home accident prevention for consultant nurses and district sanitarians, the preparation of papers and articles for three major scientific journals, the preparation of news releases and photographs dealing with accident hazards, the supplying of speakers for programs on home safety for lay and professional groups, and the designing of posters, pamphlets, and other visual aid materials relating to this program.

## **LABORATORY OF HYGIENE DIVISION—John H. Hamilton, M.D., Director**

In reviewing the activities of the State Laboratory of Hygiene for the calendar year, 1953, it would seem desirable to state at the onset that on July 1, 1953, the Laboratory had 7 fewer budgeted positions than it had on June 30th of that year. When Federal participation with the State Board of Health and Local Health Departments in the Venereal Disease Program was discontinued at the end of the fiscal year, we lost 7 workers or a reduction in the personnel of little more than ten per cent.

Since the budgetary cut was Venereal Disease money, we felt that we should reduce laboratory services in venereal disease and not impair the procedures in other fields of endeavor. Consequently, we discontinued making serological tests for syphilis for Selective Service and the Military Recruiting Services. We also discontinued participation in routine serological surveys in colleges and industries; surveys were also discontinued for geographical areas. This discontinuation of Federal participation in the Venereal Disease Program was attributed to economy. It is difficult to see, however, that any money was actually saved since the specimens from Selective Service and other military organizations were sent to Ft. McPherson for examination and the routine specimens from colleges and geographical areas were sent to the Venereal Disease Research Laboratory. Although these Federal laboratories are capable of making dependable serological tests for syphilis, they cannot do it more cheaply nor more accurately than the State Laboratory of Hygiene. The distance which the specimens must travel occasions delay since the time between taking the specimens and receiving the reports is greatly increased. It is also necessary to take second specimens on a considerable number of people whose specimens were haemolyzed upon receipt at the remote laboratory.

The reduction of our services called for a limitation in the number of specimen containers which would be distributed at any given time so that our reduced force would not be overwhelmed. We announced that first priority would be given to physicians who were endeavoring to make a diagnosis on people who were sick, and second to health departments making epidemiological studies in an effort to find the person from whom a patient with syphilis had acquired his disease and the person or persons to whom he may have transmitted the infection. We have probably lost some friends in adhering to this policy but we feel that we have distributed our limited service in the best interest of the people of the State in so doing. Although the number of serological tests for syphilis shows a decrease for the calendar year, 1953, the reduction in number was due to the restriction imposed during the last six months of the year. More than 339,551 specimens of blood were examined in 1953 as compared with more than 345,000 in 1952. In addition 3,369 specimens of spinal fluid were received for serological tests for syphilis. Of these, 2,861 had a sufficient quantity for the Determination of Total Protein. On all specimens of blood which give positive reactions we make serum dilutions and determine the highest dilution which will give a positive reaction. These titrated serological tests are reported as positive through the highest dilution giving a reaction. Our serological Group has extended their services in the field of Virus and Rickettsial complement fixation tests. During the current year we received 302 specimens for this purpose.

The *Examination of Water* from public and private water supplies continues to be a major function of the laboratory as it has been from the beginning when the Laboratory was established in 1903 and the General Assembly of 1907 made this activity a requirement and set up a schedule of fees which should be charged for these services. This established the precedent that the Laboratory must be partially

self-supporting. Neither the precedent nor the schedule of fees has been changed since that time. In 1953, 13,952 specimens of water were examined in the Laboratory as compared with 11,904 in 1952. The activities of the Water Group have been more closely related to those of the Chemistry Group with the development of the Stream Sanitation Program—the Water Group making bacterial and microscopic examinations of specimens sent in by the Stream Sanitation Commission and the Chemistry Group making chemical examinations of specimens of water sent from our public and private water supplies. In 1953 we had 1,440 specimens sent in by the Stream Sanitation Commission. On these specimens 10,737 different determinations were made. The chemical group also made 95 examinations for the Industrial Hygiene Section and 103 for the Division of Sanitary Engineering.

North Carolina's fight against *Typhoid* and the *Para-typhoid Fevers* is still producing good results, although showing a slight increase in the amount of typhoid fever existing in the state. From the laboratory point of view we received fewer specimens of blood for blood culture—2,052 in 1953 as against 2,628 in 1952. In both years we were able to isolate the organisms in only 12 specimens. Feces cultures for typhoid showed a slight increase in the number of specimens examined—2,047 against 1,954 in 1952, although we were able to culture the organisms in 246 instances in 1953 and only 142 in 1952. The typhoid Register has been maintained and one more specimen has been examined from each carrier who could be located. The number of Agglutination Tests for typhoid fever has remained practically consistent—3,085 in 1953 and 3,102 in 1952.

During 1953 the Laboratory participated in the investigation of several outbreaks of dysentery and food poisoning and contributed to the solution of a few of these. The pertinent point in these investigations is the need for the revision of our Food Handling Regulations. All of the out-

breaks in which we were able to secure definite information would have been avoided if the food-handler had been adequately instructed in the necessity of washing hands and keeping infected fingers out of food. Had the energy which was used in the making of annual physical examinations of the food-handlers been devoted to the education of the food-handler, we would have been making much better use of our energy. Practically all food handlers are conscientious persons who would not deliberately do anything which would endanger the persons whom they serve. They appreciate instruction and are prone to follow it.

For *Tularemia* approximately the same number of specimens were examined each year—2,378 in 1953; 2,451 in 1952, there being 32 positive reactions in 1953 against 30 in 1952.

We had requests to make Weil Felix Agglutination Tests on 4,692 specimens of blood—on only 9 of these was there any significant increase in the agglutination titer of the second specimens over the first specimens received from each patient. This is in comparison with 4,701 specimens and 27 increases in titer for 1952.

In 1953 we received 456 other specimens of blood with requests for culture of other organisms. For the previous year we had 570 such requests.

Although *Gonorrhea* is not decreasing in North Carolina, the number of specimens received by the Laboratory is—since 3,328 gonococcus smears were received in 1953 as against 4,694 in 1952. The percentage of positives was essentially the same in both years. Cultures for *Gonorrhea* were made on 328 specimens—isolating only four.

There was no significant change in the number of animal heads sent to the Laboratory for *Rabies* Examination, there being 796 in 1953 and 809 in 1952. In 1953—130 of these were considered to have rabies—the previous year—134. In 1953—553 antirabic treatments were distributed as compared to 542 for the previous year.

We can report continued progress in the fight against *Diphtheria* which is

reflected more in the reduction of the number of reported cases—from 202 in 1952 to 130 in 1953. We received 1,484 specimens for culture in 1953 with the organism found in 80 as compared with 1,954 with 128 positive in 1952.

Interest in *Intestinal Parasites* continues to increase among our health officers and physicians as reflected by the increase in the number of specimens examined in 1953—18,601, and also an increase in the number of specimens showing one or more intestinal parasite—3,094.

We continue to receive a small number of blood films to be examined for *Malaria*—only 386 in 1953 with typical parasites found in only one of these.

In the field of *Tuberculosis* we examined 21,025 specimens of sputum in 1953 as compared with 19,329 in 1952, finding typical acid fast organisms in 1,548 specimens in 1953 and 1,734 in 1952. Cultures for tuberculosis in specimens of sputum amounted to 2,257 in 1953 with isolations in 139 of these; whereas, in 1952 we cultured 1,853 specimens and isolated the organism in 110. We made animal inoculations of specimens of urine and spinal fluid suspected of coming from tuberculous lesions.

Again there was a marked increase in the number of specimens classified as *miscellaneous*, there being 44,757 of these in 1953. It will be necessary for us to work out new classifications for this type of specimen.

*Vincent's Angina*—only 1,033 specimens were examined in 1953 and 1,131 in 1952.

For *Cancer Cytology* we have been able to increase our services somewhat, although it is still necessary that we limit the examination of specimens to those originating in the Cancer Clinics and from the female inmates of state institutions. In 1953 the number of examinations increased from 5,599 in 1952 to 9,787—of which 100 in 1952 were considered to have originated from a person with cancer; whereas, in 1953 there were 135 specimens considered positive and 104 considered sufficiently

suspicious to justify further study.

*Shellfish Laboratory* in Morehead City made 12,902 examinations in 1953, of which 3,501 were shellfish, and 546 were crabmeat; other shellfish—8,855. Specimens of water from sounds from which the shellfish were taken were also examined.

The total number of examinations made in the State Laboratory of Hygiene in 1953 was 513,519, and increase over the 487,022 examinations in 1952.

Of the biological products distributed, the amount of typhoid vaccine showed no significant change—7,242—10cc vials, 2,711—50cc vials, and 722—100cc vials were distributed. Of these the 10cc vials went largely to physicians, with the 50cc and 100cc vials being used almost exclusively in mass vaccination clinics which in most areas of the State have become relatively rare.

There was a significant increase in the amount of *Smallpox vaccine* being distributed—187,147 capillary tubes in 1953 as compared with 165,775 in 1952.

There was a further reduction in the amount of *Pertussis Vaccine* distributed, only 1,451 immunizing treatments going out for 1953 as compared to 1,661 for 1952. It is probable that most of this *Pertussis Vaccine* was used as an initial dose for very young infants before the beginning of the use of triple antigen, the amount of which increased more than four-fold or from 48,185 injections for 1952 to 159,630 for 1953.

It is difficult to explain the two-fold increase in the amount of *Alum Precipitated Diphtheria Toxoid* distributed in 1953—18,850 injections. It may be that the tendency of diphtheria to occur in higher age groups accounts for this increase.

There was also a three-fold increase in the amount of *Tetanus Toxoid* used in 1953. If all of the immunizing agents were used, we would be immunizing approximately two-thirds of all the children born in North Carolina during the year. All in all it was the best immunizing record we have ever had. If we can maintain this rate for a few years, whooping cough, diphtheria, and tetanus would almost completely disappear

in North Carolina.

The publicity about the use of *Gamma Globulin* in connection with poliomyelitis created a vastly increased demand for this product. Early in the year the American Red Cross and the National Foundation for Infantile Paralysis purchased all the available Gamma Globulin in the country and turned it over for allocation to the Division of Civilian Health Requirements of the United States Public Health Service. The State Laboratory of Hygiene was responsible for the distribution of that part of the product which was available for the control of measles and infectious hepatitis and also for the distribution of the product that was to be used for the injection of household contacts of patients with poliomyelitis. A series of conferences were held with pediatricians and with the Committee on Child Welfare of the Medical Society of the State of North Carolina. A policy for distribution was adopted which was administratively sound, and which caused a minimum amount of controversy. A part of this policy was that gamma globulin available for use in local communities would be sent to the local health department by the State Laboratory of Hygiene. The local health officer could deliver the product promptly to physicians who needed it. As the local health department supply was depleted, additional quantities of the product could be sent upon receipt of this information by the Laboratory. The amount distributed during the year was 75,172 cc. If the physicians will report all of their patients who have measles or infectious hepatitis, they can secure all of the gamma globulin which will be needed.

The State Laboratory of Hygiene Farm is continuing to produce all the small animals needed for the operation of the Laboratory. It also makes it possible for us to produce all of our smallpox vaccine, our rabies vaccine, and our pertussis vaccine.

The Laboratories approved under the State Marriage Law for the making of serological tests for syphilis have



remained the same—approximately 160.

It is regrettable that we must make mention again this year of administrative problems which have been plaguing us for the last several years. The reduction in Federal Funds available to us has been most hurtful. It would seem to all thinking people that the Federal Government has a moral and legal obligation to support certain state and local public health activities. Many of the duties designated by Act of Congress are actually performed by official state and local public health agencies who can perform these duties more effectively than could personnel sent out by the federal agencies. It would seem right and proper that the Federal Government should either reimburse the state and local public health agencies for services rendered or that the Federal Government should participate as a partner and pay their equitable share of conducting a public health program which serves the best interest of the local communities, the states and the nation.

It is still difficult to employ properly trained young people and keep them on our staff at the salaries available. The problem of securing supplies and equipment has almost disappeared.

It is always a pleasure to testify to the loyalty of the workers who have been with our Laboratory for a considerable number of years. They have a devotion to service and loyalty which is most commendable.

We have endeavored to keep our laboratory procedures up to a high standard of performance and believe that we have succeeded to a considerable degree. We have been able to increase our service and we hope our usefulness to the physicians, to the local health departments, and other state institutions. We are confident that we can continue to render worth while service and to help make North Carolina a better place in which to live.

**LOCAL HEALTH DIVISION— C. C. Applewhite, M.D., Director**

In spite of the marked reduction in federal funds for the maintenance of local health service, it has been possi-

ble to maintain the local health program on a fairly even keel throughout the past fiscal year. A reduction of \$253,000 in federal funds for the fiscal year beginning July 1, 1953 stimulated a drive to increase local appropriations with the result that local appropriating agencies increased their contribution by approximately \$365,000. This response by local authorities to this emergency was most encouraging to those who are keenly interested in the execution of a sound and efficient local health program. It is a clear-cut indication that the people of North Carolina are willing and ready to pay for efficient local health service.

The most discouraging feature of the reduction of federal funds for cooperative health work was the reduction in the amount of money allotted for training personnel. To execute a sound local health program, trained personnel are essential. Recruitment in the health officer category has continued to be difficult because of the demand of the federal government for young physicians. During the year, North Carolina lost three young health officers to the federal government and three health officers to the grim reaper.

The campaign for improving office quarters for the local health department has been uniformly successful throughout the year. At the end of the year, twenty-five local health departments had moved into modern and well-equipped office space and at least twenty additional counties have made financial provision for the construction of health centers. This program is doing much to raise the prestige of local health service and is markedly improving the morale and efficiency of the personnel in the local health departments. It is the sincere hope of this division that the personnel of every local health department in North Carolina in the not distant future will be housed in a modern, well-equipped office.

This division is keenly appreciative of the magnificent spirit of cooperation extended its personnel throughout the year by the other divisions of the State

Board of Health and the excellent co-operative spirit which has been manifested by the personnel in the local health departments towards the whole cooperative health program. This co-operative attitude on the part of all public health workers, if maintained, is considered a harbinger of better days ahead for the people of North Carolina.

### Administrative Section

The major activities of this section consist of allocation of state and federal funds to local health departments; the processing of local health department budgets, from the mailing of budget instructions to local health officers to the time when the completed budget is finally approved; the preparing of regular reports such as the North Carolina Local Health Service Budget; and compiling pertinent information requested by the local health departments. The 100 counties are divided into sixty-nine full-time local health departments, forty-two county units, twenty-four district units and three city units.

As of December 31, 1953 there were 1,135 full-time budgeted positions in local health departments with a total of forty-eight vacancies. These figures represent a decrease of twenty-three positions over the previous year and an increase of nine vacancies when on December 31, 1952 there were 1,158 full-time budgeted positions and thirty-nine full-time vacancies. The decrease in positions and the increase in vacancies can be largely attributed to a reduction in federal funds, effective July 1, 1953, of approximately 50 per cent or around \$253,000 available to local health departments. It is noted that of the forty-eight vacancies twelve were in the position of full-time local health officers, twenty-three in public health nursing personnel and two in the field of sanitation.

As mentioned previously, due to the drastic reduction in funds, there was a reduction in the amount of money available for in-service training. In 1953, 329 individuals received some type of training under programs sponsored

by the State Board of Health. Twenty scholarships for academic training were given, including seven to health officers, ten to public health nurses and three to public health educators. The remainder of the 329 included personnel in all categories attending institutes and short courses varying in length from one to twelve weeks. This represents rather a large reduction from thirty scholarships and the 450 individuals who received some type of training during the calendar year 1952.

Perhaps the outstanding activity of the year for the Records and Procedures Analysts was the Public Health Records Short Course which was held in February, 1953. Nineteen clerks from local health departments in North Carolina attended. This course ranked with the three previous ones in presenting a basic background of public health and in stimulating a broader and more intelligent interest in the programs as a whole. This brings the number of clerks who have attended up to sixty-five, and of this number twelve have left the field of public health.

A major activity continued from year to year is the beginning in counties of the use of the same record system that Chapel Hill began in 1950. As of now, seven counties are using the complete system and five counties are using a part of it.

The year 1953 was the greatest in the history of the film library. There were a total of 10,407 health films and 1,014 cartoons distributed in 7,563 individual shipments. The library printed and distributed more than 1,500 film catalogs. It also distributed 54,732,000 units of Procaine Penicillin, 2,100,000 units of Aqueous Penicillin, 3,720,000 units of Bicillin, 61,900 Sulfadiazine tablets, 87 vials Ducey vaccine, 14 tubes Cortone Acetate, 51 vials Frei Tests Antigen, 3,408 250mg. capsules of Aureomycin, 24-10cc boxes V.D.R.L. Antigen, 3,000 A.P.C. tablets and 1,100 Pyribenzamine tablets.

### Public Health Nursing Section

On January 2, 1953 a public nursing consultant was employed who works

full time in the maternal and child health program. On July 1, 1953 a public health nursing consultant was added to the state staff to cover the fifth district which was left vacant by the resignation of the tuberculosis nursing consultant. A public health nursing consultant was employed to work full time with the team on the home accident prevention program on a three-year demonstration financed by the Kellogg Foundation.

The in-service educational programs for public health nurses in local health departments have been largely in three areas—mental health, teaching midwives and venereal disease. A midwife manual for teaching midwives and one for teaching nurses was developed by members of the consultant staff. The field training manual was a cooperative project of the state and local health department nurses.

A quarter of work by extension from the University of North Carolina was arranged for a group of nurses in the eastern part of the state. The first course, Child Growth and Development, was begun on March 27. Sociology was given as the second course beginning November 6.

One of the big events for nursing this year was the dedication on April 24 of the School of Nursing, University of North Carolina. Public health nursing is a part of the basic curriculum of the four-year degree program. Graduates of this school will be eligible for first level positions in public health nursing. It is hoped that many of them will enter this field of service.

One of our greatest needs continues to be for more well prepared public health nurses. The cut in federal funds greatly reduced the money available for granting scholarships. Adequate training of public health personnel cannot be carried out without funds.

#### **Public Health Education Section**

The staff of the Public Health Education Section underwent several major changes during 1953. The section chief resigned and was replaced; the supervisor of Public Health Education resigned and has not been replaced.

Other health educators at the state level resigned this year to accept local appointments. Subsequent to these changes, however, definite steps were started to provide consultation and other services on an organized basis to cover the areas which during 1953 had lost such services through personnel changes.

This section through consultation to the twenty-three health educators employed locally and upon request from local health departments and community groups, assisted in developing and extending health education programs to meet the health needs throughout the state. These programs included such activities as the organization of health councils, adult study courses, training schools, institutes; coordinating activities with other agencies; planning health projects and programs with civic clubs, home demonstration clubs, and other interested community groups. The public health educators have taken an active part in developing cooperative school health planning between schools, health departments and other allied agencies. Considerable emphasis has been placed upon in-service health education training for teachers and other school personnel and, upon request, assistance has been given in planning and conducting study courses on school health.

In addition, guidance and provisional reinforcement to local health educators has been carried through group and individual conferences with local health educators.

In addition, members of the health education staff met with the following groups to participate in program planning or to take part in programs: the staff conference of the N. C. Tuberculosis Association, the School Health Advisory Committee, N. C. Congress of Parents and Teachers, the committee on Family Life, a public health committee on Field Training, the Southern Branch American Public Health Association meeting, the N. C. Family Life Council Executive Committee, the N. C. Health Council and Rural Health Committee, the Extensive Service committee

for planning the health program for the statewide 4-H Club Week, N. C. Public Health Association, the annual meeting of the N. C. Family Life Council, the quarterly meetings of executives of the voluntary health organizations, the Rural Health Committee of the State Medical Society, the State Mental Health Society, the N. C. Society of Industrial Engineers, the American Public Health Association and the Conference of State Directors of Health Education.

Orientation and training programs in public health and health education were arranged and provided by the Public Health Education Section during 1953. Recipients of these programs, who in turn provided varying measures of assistance to North Carolina, included representatives from California, Minnesota, Wisconsin, in addition to foreign countries, such as Thailand, India, Vietnam, Chile, Ecuador, Philippines, Mexico, Haiti and San Salvador.

This section assisted in the development and preparation of exhibits in the fields of Veterinary Public Health, Heart Disease, Cancer and Tuberculosis. It also developed and displayed an exhibit on general health at the 1953 State Fair. Consultation and assistance was also given to other sections and divisions of the State Board of Health and other state agencies, as well as local agencies in developing flip charts, pamphlets, radio programs. Plans were started for the preparation and distribution of a quarterly newsletter to all local health departments to inform of activities of the State Board of Health in providing minimum local exchange of ideas and experiences.

#### **Mental Health Section**

The Mental Health Section was fortunate in keeping its small administrative staff consisting of the Chief of the Mental Health Section, one part-time psychiatric consultant and one full-time secretary. The mental health nurse with the Public Health Section and the mental health consultant with the School Health Coordinating Service continued to work closely with the Mental Health Section.

The decrease in federal funds resulted in a retraction of the program rather than an expansion. The distribution of the widely read and well received child care pamphlet, "Pierre the Pelican," discontinued; the Duke Child Guidance Clinic closed on July 1, 1953 because of the lack of funds; and it was impossible to purchase even a limited supply of mental health pamphlets in order to meet the demands of North Carolina citizens.

Despite the budget cut, progress was made. During the year, North Carolina's six local mental health clinics became better staffed and organized than ever before. For the first time in its history the Raleigh Mental Hygiene Clinic was able to employ a full-time staff consisting of a psychiatrist, a clinical psychologist and a psychiatric social worker. It also became affiliated with the Wake County Health Department and before the end of the year its staff was exploring the possibility of having the clinic used for the training of psychiatrists, clinical psychologists and psychiatric social workers.

For the first time in its history the Durham Child Guidance Clinic was able to employ a full-time psychiatrist. The clinic is now used for the training of clinical psychology students, and its staff has started working on plans to have the clinic used for the training of psychiatrists and clinical psychologists.

In addition to these two clinics, the Guilford County Mental Health Clinic was strengthened; the Charlotte Mental Hygiene Clinic kept its full staff throughout the year; the Asheville Mental Hygiene Clinic lost its clinical psychologist through resignation but was able to replace him. The Bowman Gray Neuropsychiatric Clinic kept its same staff through the year.

The six mental health clinics, along with the Duke Child Guidance Clinic which closed its doors on July 1, 1953, accepted 2,248 new cases and had a total of 7,285 active cases during the year.

Though there were no funds to establish any new clinics, for three months

psychiatric consultation service was provided to the New Hanover County community through the New Hanover County Health Department.

As with the clinic program, educational aspects of the program also progressed. Three in-service training courses were given to public health nurses; a three-day institute was conducted for the public health nursing consultants with the North Carolina State Board of Health; a two-day institute was given in Salisbury for the personnel of health, welfare and educational agencies; and several discussions on mental health were conducted for parents in Lillington. The fourth annual Mental Health Institute for Health Officers was held and plans were started for conducting the first statewide conference for mental health clinics. Two articles on mental health were written for the Health Bulletin and two issues of a mental health bulletin were mimeographed and distributed throughout the state. No additional issues were prepared because the size of the Mental Health Section staff prevented this.

During the year additional books were purchased for the professional library on mental health. This library was widely used by clinic, welfare and other personnel. It has proved to be of increasingly greater value to public health nurses taking in-service training courses conducted by the Mental Health Section.

#### School Health Coordinating Service

The School Health Coordinating Service of the State Board of Health and the State Department of Public Instruction continued to work on many of the same projects and in about the same way in 1953 as was done in 1952.

Staff members worked primarily with school superintendents, principals, teachers and health department personnel but continued to cooperate as usual with other agencies interested in school health.

Staff members continued to work

on the health curriculum development project until June 30, 1953, at which time the material prepared was sent to the printers. The publication, Health Education for North Carolina Public Schools, has been completed and is available for distribution to the public schools of the state, to health departments and to individuals who may wish to purchase copies.

The School Health Coordinating Service continued to administer and supervise the school health program including planning and administering the expenditure of school health funds in the amount of \$550,000 annually appropriated by the General Assembly to be allocated by the State Board of Education as grants in aid to city and county school administrative units. The plan for allocating these funds for 1953 was the same as followed the previous year, namely: (a) each county and city school administrative unit was allocated an amount equal to fifty cents per pupil based on the average daily membership for the first seven months of the previous school year; (b) in addition the sum of \$1,000 was allotted to each county regardless of size. Each school administrative unit within the county received a portion of the \$1,000 allotment based on its percentage of the total students in the county.

The policies approved by the State Board of Health and the State Board of Education in 1949, governing the expenditure of these funds, were continued. Also, the State Board of Health continued the plan of earmarking an amount equal to forty cents per pupil for school health work. Expenditures of State Board of Education school health funds for the period July 1, 1952 to June 30, 1953, were as indicated below:

Salaries:

Health Educators .....	\$ 20,230.85
Nurses .....	110,506.11
Dentists .....	13,186.64
Audiometer Technicians ..	3,169.35

Travel:	
Health Educators .....	1,661.09
Nurses .....	15,870.39
Dentists .....	810.06
Audiometer Technicians ..	135.03
Fees for Medical	
Examinations .....	26,375.14
Correction of Defects .....	293,520.17
Supplies .....	29,656.33
Equipment .....	24,790.61
In-Service Training .....	1,487.89
<b>TOTAL .....</b>	<b>\$541,399.66</b>

School health funds have been used to pay for the correction of chronic remediable defects of children of parents unable to pay for such services. However, reports show that the follow-up programs by school and health department personnel have resulted in getting an increasing number of parents who could pay to seek and pay for medical services for their children.

Services of the staff of the School Health Coordinating Service consisted of planning and promotional work and services to school and health department personnel through consultative service, field visits, planning and carrying on in-service education, production of materials, reviewing and recommending use of materials, locating and recommending the use of local, state and national resources, evaluative procedures, joint state conferences and committees, state and national organizations.

#### **ORAL HYGIENE DIVISION — Ernest A. Branch, D.D.S., Director**

In keeping with the commemorative motif of this one hundredth anniversary of the North Carolina Medical Society it seems appropriate to review some of the significant events in the history of the Division of Oral Hygiene and to honor the physician who pioneered in establishing this work. It was in 1918 that the late Dr. George M. Cooper, then director of the Bureau of Medical Inspection of Schools, employed a dentist on the staff of the State Board of Health. This dentist started work in the schools of Nash County on July 10, 1918, and North

Carolina became the first State to put dentistry in its public health program.

Before making this innovation Dr. Cooper had been assured of the approval and support of the North Carolina Dental Society. Formal endorsement was given by the Dental Society at its annual meeting that year following Dr. Cooper's presentation of the plan to the Society. Dr. Cooper's paragraph headings might well be used for a current presentation of "Preventive Dentistry." Some of them were: "Necessity for Prevention, Frequency of Dental Decay, Proof That This State of Affairs Can Be Prevented, Results of Neglect of Teeth, and Need for Dental Education." It will be seen that from the beginning the program has been one of education.

The following year, 1919, dentistry's place in a public health program received further recognition when a dentist, Dr. E. J. Tucker, was appointed to the State Board of Health, and, again, a physician was responsible. Dr. Edward J. Wood, a medical member of the Board, voluntary withdrew with the understanding that a dentist would be appointed in his place.

With such an auspicious beginning the work grew and was favorably received. In 1931 the Division of Oral Hygiene was established and Dr. Ernest A. Branch, who had taken over the work in 1929, became the director, which position he still holds.

Other highlights in the development of our oral hygiene program were:

1935—The inauguration of the Little Jack puppet show as a dental health visual education project. It has been presented every year since then and is still popular with teachers and children. Three shows are given each school day, and approximately 225,000 children every year learn from Little Jack and Dr. Carson, the dentist in the show, the rules for taking care of their teeth.

1936—The opening of the first six weeks' session of the Institute of Public Health Dentistry at the University of North Carolina. Eight consecutive summer sessions were held for the purpose of training the staff dentists

to teach dental health to the children in the elementary schools.

1938—The establishment of the service of supplying teachers with supplementary dental health educational materials. This material is planned, written, illustrated, and duplicated by members of the staff of the Division of Oral Hygiene. As many as 1,000,000 pieces have been distributed in a single year in response to requests.

1941—The erection of the Oral Hygiene Building.

1950—The endorsement by the State Board of Health of the fluoridation of public water supplies as a means of preventing dental decay.

1951—The appropriation of funds in the health budgets of all of the one hundred counties in North Carolina for dental health programs.

1953—The establishment of the Little Jack Loan Fund for dental students.

We believe that during the year, 1953, marked progress was made in improving dental health conditions of the children of our State. The most encouraging accomplishment of the year was in the area of recruitment. Seven dentists were added to the staff of the Division of Oral Hygiene, making a total of fifteen during the year, with three additional ones approved for employment in January, 1954. We regret to have to report the loss of three dentists. One resigned to go into private practice, while two retired because of ill health.

The following statistical report of educational and corrective services by the dentists on the staff speaks for itself.

#### Summary Of Corrective And Educational Work By Dentists

Number of schools visited .....	389
Number of children—mouths inspected .....	62,000
Number of underprivileged children receiving dental corrections .....	24,246

#### Amount And Class Of Treatment Itemized As Follows

Number amalgam fillings .....	11,173
Number cement fillings .....	2,340

Number silver nitrate treatments	37,728
Number teeth extracted .....	20,695
Number children—teeth cleaned .....	19,806
Number sodium fluoride treatments .....	4,993
Number miscellaneous treatments	3,728
<b>TOTAL NUMBER OF OPERATIONS .....</b>	<b>100,463</b>
Number of teeth extracted that were six year molars .....	3,364
Number of teeth filled that were six year molars .....	8,720
Number of children referred to local dentists .....	32,556
Number lectures on Mouth Health .....	1,767
Total attendance at lectures ....	63,923

As a means of interpreting the educational program of the Oral Hygiene Division to professional and lay groups several new exhibits were designed, built, and presented during the year. They were displayed at meetings of the North Carolina Dental Society, the North Carolina Public Health Association, the openings of several new County Health Centers, and at the district meetings of the North Carolina Education Association. The exhibits at the teachers' meetings stimulated widespread use of our dental health educational material. This material is supplied to the teachers, without cost to them, upon request. We are glad to report that many teachers appreciate and avail themselves of this service.

In a special effort to make the people of North Carolina mouth health conscious and, particularly, to impress on parents the importance of taking care of their children's dental health needs and to give them the needed information for doing so, a series of newspaper articles was written by the director of the Division. Under the sponsorship of the Council on Dental Health of the North Carolina Dental Society this series was published in the Sunday editions of the leading daily papers of the State and in many of the weekly newspapers. It was estimated that the papers carrying the releases had a combined circulation of over 750,000. We have reason to believe that the articles

were widely read and well received.

There was much interest and activity in regard to the fluoridation of municipal water supplies during 1953. The director of the Division met with many groups of dentists, civic clubs, parent-teacher associations, and municipal governing bodies in regard to the adoption of this public health procedure. A series of articles on fluoridation was made available to many of the newspapers of the State. Literature on the subject was also supplied to local Health Departments and other agencies promoting the measure in their communities.

Prior to 1953 eleven North Carolina communities were adding fluorides to their water supplies. During 1953 five towns were added to the number bringing the total to sixteen. The population of these towns is over 600,000. We hope that by the end of 1954 at least 1,000,000 North Carolinians will be enjoying the benefits of fluoridation.

While we are convinced that adjusting the fluoride content of water supplies to the proper level is a very effective means of reducing the incidence of dental decay, we point out that it is only one preventive measure. We continue in our program of mouth health education to stress the importance of the following proven practices:

1. Making regular visits to the dentist for the early detection and correction of dental defects.

2. Eating a well-balanced diet with sugars reduced to a minimum.

3. Brushing the teeth immediately after eating.

#### **PERSONAL HEALTH DIVISION—A. H. Elliot, M.D., Director**

##### **Maternal And Child Health Section**

Three special activities were added to the maternal and child health program in 1953 for the improvement of these services on a statewide basis.

A pediatric consultant with a Master's Degree in public health was added to our staff and spends most of her time in the field studying well baby and prenatal clinics, school health programs and services to children in

general. She works with health officers, public health nurses and private practitioners who conduct local health department clinics. It is felt that this service will mean a great deal to the health of babies and children throughout the state.

A nurse with supervising public health nursing experience whom we had sent to Chicago for fifteen months' special training in maternal and child care worked all of 1953 with the MCH section. She has given a great deal of attention to the midwife problem. She spends most of her time in the local health departments as a consultant in the nursing aspects of teaching and supervising midwives and in the nursing aspects of prenatal clinics, home visits, etc.

The third special feature in the MCH program in 1953 was the offering of an intensive three-day refresher course in obstetrics and pediatrics at Bowman Gray School of Medicine for rural general practitioners who conduct prenatal and well baby clinics for the local health departments. A quota of thirty physicians was set at the beginning, but we finished with forty-three applicants. The course was excellently planned and well received. This is planned for an annual course. Because of special interest on the part of the faculty and the State Board of Health, arrangements were made to have colored physicians attend these lectures.

Continuous effort is made through local health officers and public health nurses to get women into prenatal clinics as early in pregnancy as possible. The same thing is true in our efforts to get children immunized at an early age.

The program for the care of premature infants was continued about as in the past except that the number of beds sponsored was reduced by seven. This was done chiefly for three reasons: (1) reduction in MCH funds; (2) to increase participation in the support of the program by county welfare agencies and parents; and (3) to enable us to establish a sizeable reserve to



be used in overauthorizing very small infants. This plan, so far, has enabled us to accept all real small infants seeking care in one of the centers.

Some of the chief figures on maternal and child health activities are as follows: During the year 5,257 prenatal and well baby clinics were held, at which 27,315 maternity patients and 49,912 infants and preschool children were seen. A detailed report of the maternity and infant literature distributed from the mailing room is included in the Central Administration report.

#### **Crippled Children's Section**

Dr. Myron Rudolph, Chief of Section, died suddenly 30 June 1953 and was succeeded by Dr. Charles B. Kendall who reported for duty 1 July 1953.

During the year there were added to the activities of the Section clinics at Morehead City, Dr. L. D. Baker, Director; Ahoskie, Dr. L. D. Baker; Clinton, Dr. L. D. Baker; Halifax, Dr. E. I. Bugg; and Concord, Dr. H. Francis Forsyth. These additions have brought the clinic complement to thirty-eight in thirty-five counties operating from thirty-five to forty-one sessions a month.

Rheumatic Fever and Rheumatic Heart Disease programs were initiated at Bowman Gray-North Carolina Baptist Hospital in October, and at University of North Carolina-N. C. Memorial Hospital in December.

The plan for a Speech and Hearing Defect program has been submitted for implementation about 1 July 1954.

The Advisory Committee met in Raleigh on 25 October 1953 to consider agenda which had been widely distributed. Among other actions taken was the setting up of a credentials subcommittee consisting of the Professors of Orthopedic Surgery of the three Schools, the Medical Superintendent of North Carolina Orthopedic Hospital and one appointee of the North Carolina Orthopedic Association. This subcommittee will act upon the credentials of applicants for acceptance to the roster of cooperating orthopedic surgeons and aid in the selection of clinic

directors. With the assistance of our qualified plastic surgeons this subcommittee also aids in the selection of plastic surgeons for the program. Special advisory and credentials bodies have been set up for ear, nose and throat, the dental specialties, pediatrics, genito urinary and neuro surgery,—as has an advisory body for a Speech and Hearing Defect program.

A diligent effort has been made to encourage the proper use of prescribed procedures and forms and to stimulate better record keeping with the view of aiding evaluation procedures.

An attempt has been made to establish active sponsors for all the clinics. These are local civic or service bodies interested in the clinics' functions and in the support of minor clinic necessities for the indigent beneficiaries. Sponsors have been established for all but seven clinics.

Summer camps were conducted at Salisbury and Washington under the auspices of organizations.

By direction of the Advisory Committee all requests for service (other than in the State clinics) for children crippled with the residuals of poliomyelitis are presented to the County Chapter of the National Foundation for Infantile Paralysis to determine their ability to support the requests. Delay is obviated by immediate acceptance by our agency in the hope of assurance of reimbursement or acceptance by the National Foundation for Infantile Paralysis. Where lack of funds is signified by the foundation total acceptance is accorded by the Section.

A review of training during the year indicates the attendance of personnel in various national and state conferences and participation in training programs in health departments and civic groups, by formal instruction in Schools of Nursing and physical therapy and in the annual nursing institute on poliomyelitis. A seminar of instruction on the Rheumatic Fever Program was held at North Carolina Baptist Hospital in October.

## 1953 Statistical Data

Children receiving Clinic Service .....	9,113—17,674 visits
Hospital Care .....	1,199—17,168 days
Convalescent Home.....	54— 1,648 days
Other Service .....	91— 472 visits
Appliance .....	854—

## Prevailing Conditions Treated:

Residuals of poliomyelitis .....	1,220
Disease of bones and organs of movement except congenital .....	1,144
Flat foot (all types) .....	1,061
Club foot .....	815
Cerebral palsy .....	712
Congenital malformation (other than—spina bifida, cataract, circula- tory, cleft palate and lip, hip, club foot, flat foot) .....	668
Curvature of spine (except congenital, tuberculosis or polio) .....	306
Burns .....	212
Cleft palate and lip .....	211
Arthritis .....	116

## Nutrition Section

The Nutrition Section received more requests for service during the year than during any preceding year. These requests covered a broader field than in the past indicating, it is believed, an increasing awareness of the many types of service available from professionally trained nutritionists and dietitians. There are still phases of the nutrition and dietary services which are not yet being utilized by the professional and lay groups of the state, but this is to be expected of discipline which has been so recently added to the public health program. Better integration of this service with other services of the State Board of Health and other state agencies is obvious when one compares the report for this year with that of 1944, which was the first full year's report of nutrition activities.

Many of the services initiated in 1944 are continuing, such as: Regular in-service training conferences on nutrition for public health nurses throughout the state. There were 57 of these, attended by 768 nurses. Three-day dietary surveys were made in nine schools in four counties of 265 children. Intensive in-service training for public school teachers has also been continued upon the request of county and city superintendents of school. One thousand five hundred and forty-seven

teachers attended the 64 in-service courses that were given. Nutrition consultation service has been given to public health nurses on an individual basis and upon request to all public school teachers who have participated in the nutrition training programs at any time during the past ten years. Group instruction in nutrition was given to 3,219 patients in pre-natal, well-child, orthopedic and general clinics in the districts in which they worked. Individual instruction was given 1,341 persons. The two dietary consultants received requests from and gave assistance to 18 small hospitals and 14 state and county institutions. This included planning and working with food service managers, dietitians and hospital administrators on such matters as personnel training, purchasing guides, menus, modified diets, food preparation, food cost control and use and selection of kitchen equipment. They reviewed 25 architectural plans and specifications for food service departments including recommendations for suitable kitchen equipment.

Several new types of activities were conducted and other activities were extended. In the first category, that of new activities, are the following:

(1) A two-day institute in Greensboro for Food Service Managers of small hospitals directed by the Public Health Dietitians. This was held under the

joint sponsorship of the North Carolina Hospital Association, the North Carolina Dietetic Association and the North Carolina State Board of Health. This first venture was enthusiastically received by the 28 participants who requested that a longer institute be held in 1954. Plans for this are in progress.

(2) A study of the food served, over a three month period, at Central Prison and a selected number of the prison camps. This study, which has not been completed, is being made at the request of the State Director of the Prison Department.

(3) Preparation of a set of cards on Infant Feeding for use by physicians in well-child clinics. These cards include space for written instructions by the physicians; explanation of why certain types of food should be added to the diet and ways of preparing and feeding them.

(4) Two state-wide workshops for 228 white school lunchroom managers and one for 65 Negro school lunchroom managers. These were sponsored by the State School Lunch Program of the Department of Public Instruction. Nutrition consultants served as nutrition instructors discussing the importance of nutrition for "the good growth and development of children" and in the "planning of menus which provide foods essential for growth; are appetizing and economical."

(5) Mass Feeding Training Institutes for Civil Defense. Ten one day institutes were conducted in different sections of the state by the staff of the Nutrition Section, sanitarians, state school lunch supervisors, vocational home economics supervisors and nutrition specialists of the Agricultural Extension Service. These institutes, were for the purpose of training home economists who could in turn conduct short courses in mass feeding for county and local groups. This was attended by 145 home economists.

(6) A weight control program sponsored by the Greensboro Heart Association. Several members of the Nutrition Section participated along with physicians, home economists, nurses,

and health educators and a representative from the YWCA and the Women's Medical Auxiliary in planning for and conducting this, the first group weight control program in the state. Physicians referred their patients to a series of four meetings, held in May. Periodic follow-up meetings were planned by the group at the conclusion of the program. Two additional programs were conducted during the fall, one of which was for Negroes.

(7) A public health nutritionist was employed by the Guilford County Health Department. This is the only county health department in the state with a nutritionist on the staff.

Services which were extended during the year include:

(1) The addition of a nutritionist to the staff of the orthopedic clinics in those areas of the state covered by a nutrition consultant. At the present time four districts of the state (40 counties) are not adequately covered because of lack of personnel. Nutritionists participate regularly in 23 orthopedic clinics and cover two orthopedic clinics part time. Orthopedists refer patients needing guidance in improving nutritional patterns; special diets; food budgeting. Group instruction in nutrition for patients and parents of patients is conducted by the consultants where facilities permit.

(2) Consultation on food service to the two Crippled Children's camps, Beaufort County and Rowan County respectively was continued. Assistance was also given in the camp held in Rowan County for children with speech defects.

(3) Participation of nutrition consultants in the Institutes on Care of the Premature conducted for hospital and public health nurses at Duke Hospital and in districts throughout the state.

(4) Participation of nutrition consultants in the two-week Institute for Midwives held in Fayetteville and in training programs for midwives in county departments.

(5) Consultation to local welfare departments in food budgeting for clients receiving assistance and in plan-

ning diets for those for whom therapeutic diets have been prescribed.

(6) Nutritionists served as lecturers and consultants in the summer Health Education Workshop and the Resource Use Workshop, both for teachers, held at North Carolina College at Durham.

(7) Nutritionists supervised two months field training for each of two students in Public Health Nutrition; one from Simons College and Harvard School of Public Health and one from the School of Public Health of the University of North Carolina.

(8) The dietary consulting service participated in the Jail Management Course for county and city jailers sponsored by the Institute of Government.

The General Assembly approved an appropriation, recommended by the Advisory Budget Commission, for salaries for two nutrition consultants. Reduction in Federal Funds, however, decreased the number of nutrition positions budgeted as of July 1 thus partially offsetting the state aid which would have made it possible to give more assistance to the county agencies and institutions.

The Nutrition Section could not have given the services it did, during the past year had it not received encouragement and cooperation from the staffs of the local health departments in which the consultants worked and from the co-workers in the State office. Credit for the increased interest in Nutrition throughout the State has depended to a great extent upon this cooperation.

### Cancer Section

Two new Cancer Centers were opened during 1953. The Detection Center which opened at Lincoln Hospital in Durham on April 20, 1953, was the first cancer clinic in the State to be staffed by colored physicians and limited to colored examinees. A Detection and Diagnostic Center began operation at Rutherfordton on August 18, 1953.

These additions bring the number of Cancer Centers in North Carolina to twelve. Any citizen of the State may receive a free detection examination for

cancer of the skin, mouth, breast, genitalia, and rectum at any of these Centers. Six of the Centers also operate a diagnostic clinic staffed by specialists. Only examinees with suspicious findings are referred to the diagnostic clinic, where they receive the benefit of group opinion and recommendations.

The Detection Centers only are located at Burlington, Halifax, Lincoln Hospital in Durham, Sylva, Elizabeth City, and North Wilkesboro. The Detection and Diagnostic Centers are located at Asheville, Watts Hospital in Durham, Rocky Mount, Greensboro, Wilmington, and Rutherfordton.

Cytologic services were extended during 1953 to include all the clinics, and Papanicolaou smears are taken on all female examinees.

During the year, 10,202 examinations were made in the clinics. Of the number, 5,645 were referred directly to their personal physicians. An additional number of 2,138 were referred to the Diagnostic Centers. All patients seen in the Diagnostic Centers are then referred to their physicians. Therefore, a total of 7,783 persons (76.3% of all examinees) were referred from the clinics to private practicing physicians.

A total of 331 cancers (3.2% of all examinees) were diagnosed in the clinics. Other pathology was found in 7,451 instances. Only 2,420 examinees (23.7%) were found to have no pathology in the areas examined. In establishing diagnoses, 923 biopsies and 41 diagnostic x-rays were done. Diagnostic staffs recommended that an additional 161 biopsies and 106 diagnostic x-rays be done outside the clinics. Also, it was recommended that 50 examinees be given x-ray therapy and that 872 operations be performed.

Under the program for the hospitalization and/or treatment of medically indigent cancer patients, 518 new cases were approved. Bills paid totaled \$102,865.14.

Under a separate program, 744 medically indigent individuals were approved for hospitalization for diagnosis of possible cancer. The cost of this program was \$23,123.97.

In January, 1953, it was decided to limit the Gastric Cancer Detection Mobile Unit to examinations of patients in the State Hospitals at Butner, Dix Hill, Morganton, and Goldsboro. This experiment had the endorsement of the private practicing radiologist who studies films taken on this Unit. The Unit will visit each of the four hospitals once each year in order that a large number of patients can be x-rayed and followed at yearly intervals. All four hospitals were surveyed once during the year.

### Heart Section

The Heart Section gave a three day refresher course to thirty rural general practitioners at Bowman Gray Medical College in March and September. It gave one primer and one more advanced course in electrocardiography at Duke Medical College to thirty general practitioners in June and January (54—because of the Christmas holidays, etc.) It subscribed to the Heart Bulletin for all white general practitioners, internists and cardiologists and to all the colored physicians. The Heart Section furnished an EKG machine for a special rheumatic fever and rheumatic fever heart disease clinic at N. C. Baptist Hospital for children in seven adjoining counties.

In an effort to put patients whose tuberculosis screening x-rays indicated possible heart or blood vessel disease in touch with their physicians, the following form letters were mailed out:

Number of letters to patients in regard to their chest x-rays ----	1,608
Number of letters to the family physicians of these patients ----	1,608
Number of cards and letters from doctors and patients saying the patient had reported to his doctor -----	1,200
Number of letters to patients who did not give the names of their doctors, enclosing card for this information -----	68
Number of follow-up letters to patients that we did not hear from after 60 days, enclosing card-----	489
Number of final reports made to County Health Officers of the work done in their Counties:	

Currituck -----	1
Number of patients who died before they received our letters --	4

### SANITARY ENGINEERING DIVISION—J. M. Jarrett, Director

The following report is a brief summary high-lighting the numerous activities engaged in by the personnel of this Division during the calendar year 1953. No attempt will be made to point out the many improvements secured in the field of environmental sanitation in this brief, since detailed monthly reports have been submitted to the State Health Officer and members of the State Board of Health.

#### Administration

Practically the entire time of the personnel has been devoted to a program of co-operation with and assistance to Federal, State, municipal, and county officials, and other agencies concerned with mutual sanitation problems.

As in the past, special assistance was given to the Budget Bureau, Department of Public Instruction, Department of Public Welfare, State Highway and Public Works Commission, Hospitals Board of Control, State Department of Conservation and Development, Medical Care Commission, School of Public Health at the University of North Carolina, the State Department of Agriculture, and the private consulting engineers, architects, municipal officials, and local health departments.

#### Engineering Section

As in the past, time was devoted during the year to assisting the operators of municipal water and sewage treatment plants in connection with special operational problems. Attention was devoted during the year to operational problems of sewage treatment plants, and a number of detailed reports were submitted to municipal officials regarding much needed improvements to their sewage treatment plants. The staff members also assisted with the Water Works and Sewage Works Operators' Schools which were held at Duke University and State College, and took part in the Industrial Waste

Conference which was held at the University of North Carolina.

Co-operation was given architects and school officials in planning water and sewage facilities for the many new consolidated schools which were built during the year.

A number of towns were assisted with the location of new well sites, which was carried on in cooperation with the State Geologists' office.

Our District Engineers have continued to consult with and assist consulting engineers, industrial officials, and municipalities, in co-operation with the State Stream Sanitation Committee, on problems relating to the disposal of sewage and industrial waste. Public hearings were held throughout the State by the State Stream Sanitation Committee, of which the Director of this Division is Chairman, for the purpose of establishing Water Quality Standards. These Standards were adopted.

Co-operative work with the U. S. Geological Survey laboratory has continued, and we are receiving valuable information concerning the chemical character of public and industrial water supplies in the State.

Surveys and inspections were made of all interstate carrier watering points and water supplies, and reports were furnished the U. S. Public Health Service as one of our co-operative projects with the Service. Special attention was given to the watering facilities at the State Ports Authority's docks at Wilmington and Morehead City.

Matters relating to the formation of Sanitary Districts, particularly financing problems, were investigated and handled with the proper officials.

The program carried on in recent years in co-operation with the Federal Housing Administration continued, and a number of inspections were made for the approval of subdivisions and for individual water supply and sewage disposal systems. The same type of program has also been carried on in co-operation with the Veterans Administration.

Four new water plants were placed in operation during the year at Landis,

Roxboro, Yanceyville, and Stanley.

Because of the drought, considerable time was devoted to helping towns throughout the State with emergency water supplies, and in promoting the construction of facilities which would tend to correct such problems in the future.

The 2nd Industrial Waste Conference was held at the University of North Carolina during the year. The purpose was to bring together industrial officials and municipal and regulatory agencies to study and establish a program of co-operation in connection with industrial waste treatment and disposal. State College, the University of North Carolina, and Duke University are co-operating in this project, together with this office, the State Stream Sanitation Committee, and the North Carolina Sewage Industrial Waste Association.

Considerable time was also devoted to promoting the program of fluoridation of public water supplies, and in working with operators and municipal officials in getting the fluoridation program started. During the year, 5 programs were started, making a total of 17 in operation at this time.

### Sanitation Section

A number of special activities were engaged in in the general field of environmental sanitation. Considerable time was devoted to assisting a great number of poultry processors in the design of better facilities for the processing of poultry, as well as working with those interested in the construction of abattoirs and slaughterhouses. These industries have increased tremendously in the State during the past year, and this office has assisted with the design of practically all the plants built.

Work was done with the Nutrition Committee on Civil Defense in the preparation of food service bulletins and sanitation of food supplies during an emergency. We also co-operated with the Department of Agriculture in connection with a program of meat grading.

Special conferences were held throughout the State with local health officers and sanitarians, at which time

the 1953 Milk Ordinance and Code was explained.

We also worked with the Highway and Public Works Commission in developing plans for roadside parks, particularly in connection with those problems relating to water supply and sewerage.

In co-operation with the State Laboratory of Hygiene, a program of certification of local laboratories doing milk work was started.

We continued work on the sanitation of migrant labor camps, in co-operation with the Employment Security Commission, and the Agricultural Extension Service at State College. During the year, a bulletin was prepared for distribution to farmers and others employing migrant labor, outlining methods by which they might improve the sanitation on their farms to protect the health of themselves, and these laborers.

A film on Food Handling was made in North Carolina, in co-operation with the U. S. Public Health Service and the restaurant industry, which will be used throughout this State and other sections of the country in connection with food handling courses.

The program of food handling courses for employees of public and private food handling places, which have been increasing in number each year, continued during the year. Representatives of this office participated in 16 such courses. A program was also inaugurated with the Prison Department in developing plans for improvement of food handling and sanitation services in all prison camps.

Efforts are being continued to secure qualified and competent sanitarians for local health departments, and during the year training courses were given in co-operation with the Department of Field Training of the School of Public Health.

### **Insect And Rodent Control**

Assistance was given to local health departments throughout the State in connection with the ratproofing of buildings, rat eradication, DDT dusting for ectoparasites, and mosquito and fly

control. In addition to this, a surveillance program, on which every effort is made to correctly establish the existence and location of diseases caused by insects and rodents, continued to be one of the major activities. During the year, however, the Public Health Service personnel employed on this work were discontinued. This seriously affected the program, since the Public Health Service has financed, to a great extent, the insect and rodent control work in this State for the past several years. Funds were received from the State to continue this program, but at a reduced rate.

The construction of farm ponds continues, and since these are controlled by the Communicable Disease Regulations, it is necessary that permits be issued for construction and operation.

Our entomologists and engineer spent considerable time with the U. S. Corps of Engineers, and others, in connection with the John H. Kerr Reservoir where heavy anophelene breeding took place during the summer. Efforts are being made to establish better control procedure, in order to reduce or eliminate mosquito breeding in this area in the future.

Conferences were also held with the Federal Power Commission and Virginia Electric Power Company representatives relative to dams which are to be constructed on the Roanoke River.

The personnel of this unit also continued to keep alive the interest of the local authorities in connection with drainage projects, the cleaning of existing ditches, larviciding for mosquito control, and residual spraying of private premises, institutions, business establishments, etc., for the control of flies and mosquitoes. They also co-operated with some of our larger cities in their space spraying programs, and with local health departments in rat-poisoning programs for private premises, institutions, and business establishments. In all of these activities, we have been interested in the promotional and technical supervisory phases, although the greater amount of money was expended by the local communities, or indi-

viduals.

Attached to this report is a numerical tabulation of some of the major in-

spectional and supervisory activities carried on by the Sanitary Engineering Division during the year 1953.

## NUMERICAL SUMMARY OF ACTIVITIES

### ENGINEERING

Public water supply inspections .....	585
Well sites examined and approved .....	48
Water samples collector and examined .....	101
Special investigations conducted (water supplies) .....	54
Sewerage system inspections .....	400
Plant site investigations .....	118
Special investigation (sewerage systems) .....	52
Sand analyses .....	50
Water supply plans approved .....	42
Sewage works plans approved .....	39
Swimming pool plans approved .....	8
Sewage plan plans furnished .....	119
Swimming pool plans furnished .....	7
Outdoor bathing places investigated .....	36
Sources of water examined for interstate carriers .....	22
Watering points examined .....	48
FHA developments investigated .....	14
FHA cases processed .....	975
VA cases processed .....	87
Special conferences with engineers, city and county officials .....	609

### SANITATION

Milk plant inspections .....	146
Dairy Farm inspections .....	1,168
Milk surveys completed .....	37
Milk plant plans reviewed .....	2
Special investigations (milk) .....	5
Milk samples collected .....	277
Conferences regarding milk .....	205
Food handling establishments inspected .....	1,691
School lunchroom inspections .....	207
Abattoir and meat processing plant inspections .....	323
Meat market inspections .....	413
Frozen food locker plant inspections .....	56
Poultry plant inspections .....	98
Plans reviewed for food handling establishments .....	445
Food handler schools held .....	16
Private water supply inspections .....	1,543
Private sewage disposal inspection .....	587
Privy inspections .....	2,619
Summer camp inspections .....	20
Institutions inspected .....	219
Hospital plans reviewed .....	32
Public school inspections .....	122
Swimming pool inspections .....	14
Hotel and tourist camp inspections .....	200
Complaints general sanitation .....	279
Special investigations .....	67
Special meetings .....	338



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# The Health Bulletin

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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

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Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
Malaria	Venereal Diseases	

### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine) monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
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## ANIMAL DISEASES AND PUBLIC HEALTH

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North Carolina State Board of Health

A study of the history of man will reveal that he has depended always upon animals in order to survive. First, man learned to hunt animals for food, and later used their hair and hides for clothing. As civilization advanced, man domesticated several species of animals which provided him with milk and meat as needed. Power for the farm and transportation were added to the burden of animals although modern civilization has greatly reduced these needs by mechanization. Also, one must not overlook the companionship and hunting pleasures which millions derive from the ownership of animals, particularly the dog and cat.

In the field of medical research, animals have contributed significantly to the conquest of human disease. Endocrine gland extracts, diphtheria, smallpox and rabies vaccines, surgical procedures, drug therapeutic and toxicity trials are only a few of the advances of modern medicine made possible by animals.

Although animals have had a leading role in the advancement of man, various disadvantages have accompanied this association. Man placed animals in unnatural environments under crowded conditions, which led to a concen-

tration of disease-producing organisms. With advances in modern transportation, the world began to "shrink" epidemiologically and there occurred widespread dissemination, not only of animal diseases, but also of those animal diseases communicable to man.

Because of these developments, a relatively new term "veterinary public health," has gained wide acceptance. The World Health Organization defines veterinary public health as "all the community efforts influencing and influenced by the veterinary medical arts and sciences applied to the prevention of disease, protection of life and promotion of the well-being and efficiency of man."

Although the practice of veterinary medicine always has contributed greatly to the control of many of man's communicable diseases, it is only recently that health departments have initiated programs in this broad field. The North Carolina State Board of Health organized a veterinary public program in 1951.

The control of animal diseases of public health significance is largely the responsibility of the veterinary profession. The role of the veterinarian may be any of the following: a practitioner advising his clients and reporting disease, a livestock sanitary

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official in the Agriculture Department who investigates disease outbreaks and institutes control measures, a research veterinarian or teacher in an educational institution, or, a public health veterinarian seeking to protect human health from those diseases of animals capable of transmission to man.

In every successful endeavor, it is teamwork that really counts. Football games are never won without coordination between the line and backfield or by running with the ball toward the wrong goal. The public health profession is a large team of many players with varied backgrounds. This team has one common goal—to protect and promote a state of community well-being. It is hoped that the brief description of some animal diseases and their relation to public health which follows will demonstrate how the public health veterinarian fits into the public health team in North Carolina.

The duties of the public health veterinarian on the staff of the North Carolina State Board of Health may be broken down into several broad categories:

1. Development of programs to control and eradicate animal diseases transmissible to man.

2. Consultation with staff members of local health departments, officials of county governments, and voluntary agencies concerning veterinary public health problems.

3. Consultation with other departments of state government (Agriculture, Wildlife, Conservation and Development, etc.) regarding veterinary public health problems.

4. Development of field and laboratory investigational projects of special animal disease problems.

5. Assistance in developing programs for the inspection and sanitary production of all foods of animal origins.

There are over eighty diseases of animals transmissible to man; however, several of them are of no great public health importance in the United States today. Many of these diseases, known as the zoonoses, are public health problems in foreign countries

where peculiar practices and customs of the native population help to maintain and propagate the disease. In the United States there are several animal diseases which vary in public health significance from those which are believed to occur infrequently to those which are classed as serious public health problems. The appended chart includes twenty-nine of these diseases which are considered public health problems in the United States and in North Carolina.

To understand the importance of the zoonoses or animal diseases transmissible to man, one must consider that they have certain unique characteristics. First, they may be transmitted to man in several ways; namely, by contact with an affected animal, by eating contaminated animal products, by arthropod vectors serving as a link between the animal reservoir and the human host, or, by exposure to a common source in nature from from which the animal becomes infected. Second, once the infection occurs in man, it is usually limited to the diseased individual, and there is seldom person-to-person transmission. Third, the highest incidence of disease occurs in individuals whose occupations bring them into contact with animals or their products. Fourth, it is also possible for humans to transmit to animals diseases which would not otherwise occur among the animal population.

In order to demonstrate more clearly problems in the field of veterinary public health a few examples will be briefly discussed.

### Rabies

The most important animal disease which holds major public health significance is rabies. Rabies, known to many as hydrophobia, is one of the most dangerous diseases of man. Frequently called "going mad" when it affects animals, it is most prevalent among the carnivora such as dogs, cats, foxes, wolves and coyotes. Rabies is caused by a virus which is present in the saliva of rabid animals. The saliva,

which contains the virus, enters the body through a fresh break in the skin, most commonly caused by a dog bite. All warm-blooded animals are susceptible to rabies, and the exposure of freshly broken skin to the saliva of any rabid animal may permit enough of the virus to enter to produce rabies. The virus of rabies grows only in nerve tissue.

It will not pass through unbroken skin or mucous membrane nor through any wound more than twenty-four hours old. The virus reaches the brain by way of the nerves, finally producing paralysis and death. Once rabies develops, it is always fatal to both man and animals. Few humans in North Carolina die of rabies, but each year hundreds of persons receive the anti-rabic treatment after being bitten by a rabid or suspected rabid animal.

Rabies is widely distributed among animals in North Carolina. Thirty counties have reported animal cases in 1954. Although this state is classed as a heavily infected area, there has been much improvement in the control of this disease in recent years. If rabies is to be controlled, it is essential that there be cooperation among the people of the community. Control measures entail inconvenience. Many times these measures are interpreted by various groups in the community as an unnecessary sacrifice of their interests. As an example, during a county-wide quarantine, the dog owner resents the restriction of his pet's liberties and cannot understand why he should have his dog vaccinated. The livestock owner demands protection of his livestock. The person who loves to hunt foxes with dogs objects violently to being deprived of his only sport. Even the person who is not interested in foxes, dogs, or livestock acclaims that the attacks of rabid animals to which he is subjected be prevented. Rabies control measures in the community, therefore, can be effective only if all the people concerned with this problem—and that includes practically every citizen—understand the objective of the control programs. Be-



A Dog With Furious Form Of Rabies . . . A  
Virus Disease Fatal To Both Man And  
Animals (Photo by Fay Ridenhour)

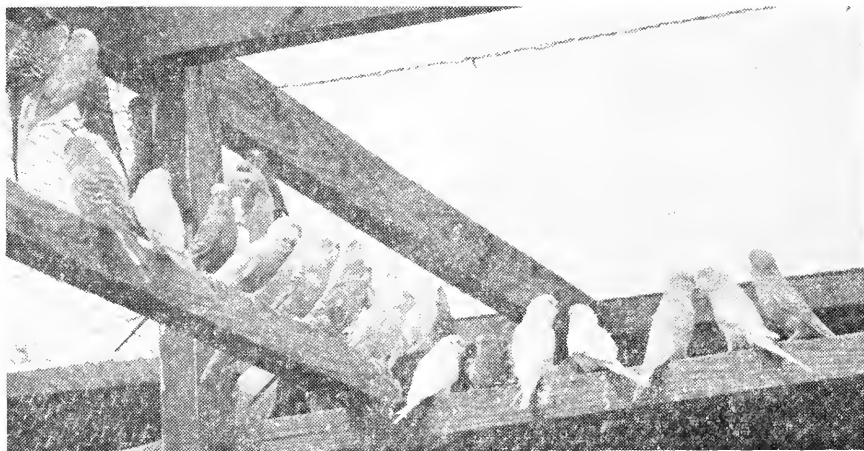
cause thirty-eight of the United States are infected, rabies is a national problem and its control can best be achieved by uniform action on the part of every state. The North Carolina State Board of Health through the Veterinary Public Health Section is constantly assisting the local health departments in the organization of adequate rabies control programs. These programs are based on the following broad principles:

**1. Mass immunization of dogs.**

Each year vaccination clinics are conducted throughout the counties. It is a known fact that vaccination gives adequate protection to most animals for at least one year.

**2. Control of all stray dogs.**

Mass immunization will not reach the stray or ownerless dog, which may remain in the community as a great threat in the transmission of rabies. Dog wardens have been appointed by boards of County Commissioners in thirty North Carolina counties and



Parakeets Are The Major Source Of Human Psittacosis Cases

have proved extremely effective, not only in the control of rabies, but in the protection given wildlife and livestock. Tremendous losses of the latter are caused by stray dogs in North Carolina. A sanitary dog pound efficiently operated is established where stray dogs are placed for a few days by the dog warden. If unclaimed, they are humanely destroyed. Stray dog control is possible in every county under the optional dog warden law, and is financed by dog tax funds.

Rabies research continues to contribute to the fight against this dread disease. Better methods for laboratory diagnosis have been devised and advances in human antirabic treatment for those severely bitten around the face have been developed. It is also known that thorough washing of wounds with soap and water is effective in ridding the wound of the virus. Improved vaccines for use among dogs have also been developed.

As long as there is rabies in North Carolina, a serious public health problem will exist. It is hoped that everyone will support county officials in the development of adequate control programs. When one has the misfortune of being bitten by an animal, he should accept only the advice of his family physician, local health officer, and local

veterinarian regarding rabies in man and animal. They are best qualified to give accurate information about this disease. A primary objective of veterinary public health is to control and eventually eradicate this disease.

#### Psittacosis

Psittacosis is a virus infection of psittacine (hook-billed) birds. It is frequently called "parrot fever" or "parakeet fever" because usually it is found in these psittacine birds. Human infection with this disease is usually traced to an association with infected birds of the psittacine family. Although the disease has been reported in ducks, chickens, turkeys, and pigeons, and human cases have resulted from contact with these birds in poultry processing plants, the viral agent causing infection in these birds is rarely as serious to man as those from psittacine birds, and the majority of infections from these other sources are probably not recognized. There is always the greater risk of being repeatedly exposed when infected birds are kept in a cage in the home.

Since the federal ban on the interstate shipment of psittacine birds was lifted in 1951, there has been a tremendous increase in the psittacine

bird industry. Parakeets have become very popular as house pets. Not only has there been an increase in bird dealers and breeders, but many people have begun to raise parakeets as a hobby in the attics and basements of their homes. The trading, bartering, and exchanging of these birds among breeders often leads to the spread of infection. Accompanying the increase in domestically raised birds has been the increase in illegally imported foreign birds. No doubt this has been responsible for the infection of many humans and bird aviaries whose owners unwittingly purchase "bargains" from unscrupulous dealers who flood the market with any kind of bird regardless of the state of its health.

Young psittacine birds are more likely to show symptoms when infected than old birds. They may have ruffled feathers, act droopy, and appear chilled. Diarrhea and a discharge from the eyes may be present. Of great importance is the fact that psittacine birds may act as symptomless carriers and appear normal, yet harbor and discharge the virus in their droppings which can cause human infection. Humans are usually infected by inhalation of dust contaminated with the virus from dried droppings in the cages. When the birds flap their wings these small infected dust particles are carried in the air and inhaled by persons near the cage. Symptoms in man usually begin two to three weeks after initial contact with infected birds and include headache, chills, fever, backache, cough and other evidence of respiratory involvement. A physician should always be consulted.

Control of this disease depends largely on the cooperation of bird lovers, breeders and dealers. One should never buy birds unless he knows the source of the bird is a clean, healthy aviary. Dealers should not offer for sale weak, immature, or sick parakeets. Bird dealers and breeders should provide sanitary housing facilities and maintain records of all sales, trades, or exchanges of birds for a period of two years (N. C. law requires that this be

done). Leg banding is advisable, practical, and gives assurance to the buyer that his bird came from a dealer who is making an effort to reduce the risk of psittacosis.

It is most important that the North Carolina State Board of Health be informed immediately regarding any unusual illness or deaths among psittacine birds. Recently several human cases of psittacosis have been reported; psittacosis virus has been isolated from several parakeets and three aviaries placed under quarantine. Unless this problem is controlled by the bird industry itself, there no doubt will soon be a need and demand from the alarmed public for public health officials to institute more drastic control measures against this disease.

### Leptospirosis

For many years leptospirosis was believed to be an infectious disease of man caused only by contact or association with infected dogs and rats. Leptospirosis in man is called Weil's disease when the infectious agent is *Leptospira icterohaemorrhagiae* (rat or dog) and Canicola Fever when the agent is *Leptospira canicola* (dog). The general symptoms in man are jaundice, fever, nausea, muscular aches and pains, and vomiting. Persons in those occupations which bring them in frequent contact with rats are often victims of leptospirosis (Weil's disease). The public health hazard of contact with infected dogs has not been evaluated. It is known that dogs do infect people and that the dog is capable of harboring both the dog and rat strains of the organisms. Early diagnosis and prompt veterinary treatment of infected dogs, along with good personal hygiene by those who handle infected dogs, will certainly help to minimize this hazard. If dogs are not properly treated, they may remain carriers of the disease and shed the infection in their urine.

Investigations recently have revealed rather large outbreaks of leptospirosis in human beings who were exposed in contaminated swimming ponds. It is



Abortion In Cattle Is A Sign Of Leptospirosis And Brucellosis  
(Photo By U.S. Public Health Service—C.D.C.)

believed that farm animals (dogs, cows, hogs) had contaminated nearby creeks and streams which supply ponds and lakes used for swimming during the summer months. Serious swimming outbreaks have been reported in Georgia and Alabama and a small outbreak is believed to have occurred in a mountain county of North Carolina last year.

There are several species of leptospira organisms, but at present only five are believed to be occurring in this country. A few years ago veterinarians observed a serious disease in cattle which produced symptoms of fever, abortion, depression, diarrhea, icterus (jaundice), loss of milk production, and sometimes blood-tinged milk and bloody urine.

Research has revealed this disease to be caused by a species of leptospira (*Leptospira pomona*) not found in either the dog or rat. It is capable of infecting man but does not cause abortion in the human. The same agent causing infection in cattle, however, is known to produce abortion in

swine. The public health significance of leptospirosis in cattle is not known, but milk from infected cows is known to be safe if it has been properly pasteurized.

Because of the increased attention being given leptospirosis by physicians and veterinarians, there has been an increase in reported human cases in North Carolina, some which terminated fatally. In some of the eastern counties human blood specimens submitted to the State Laboratory of Hygiene have been positive for several different species. Cattle, swine, and dog blood specimens from various sections of the state have also proved positive for several species of leptospira.

Leptospirosis was formerly believed to be an unusual or rare disease of humans which had its source in infected animals. This concept has changed. It is now believed to be of prime economic importance to the livestock industry and a definite public health problem. Only through research, improved diagnostic methods,



and constant awareness of the problem on the part of physicians, veterinarians and laboratorians can this problem be evaluated and controlled.

### Brucellosis

Brucellosis or undulant fever is a natural disease of cattle, swine, goats and sheep. Man becomes infected by ingesting *Brucella* infected milk or milk products and by contact with infected animals and their products. During the past decade, modern public health milk ordinances requiring that milk be pasteurized have been adopted in most communities of North Carolina and human cases from raw infected milk are less frequent, although a problem still remains in rural areas where milk is consumed raw. Human infections from contact with infected animals and their products are today perhaps a greater health hazard than milk-borne infections. It has been stated that about 75 per cent of all human infections can be attributed to occupational exposure. The male farm worker, veterinarian, packing and rendering plant workers are groups with a high rate of infection. Contact with cows or hogs which have aborted, handling the aborted pig or calf, and contact with the placenta are the most dangerous types of exposure. Abattoir workers also are frequently infected.

Human brucellosis infections reported in North Carolina have always been less than those reported in most other states. This is a record of which the state can be very proud but to preserve this standing will take a great deal of effort. North Carolina has found itself in the strategic position of being one of the three states in the nation which has less than 1 per cent of its cattle and 5 per cent of its herds infected with brucellosis. (The national average is 4 per cent and 20 per cent, respectively.) Great credit is due the Veterinary Division of the State Department of Agriculture for its tireless efforts in reducing this cattle plague through effective control programs. The battle has not been won, however, and many other states still

report heavy infections.

There is a definite danger from the increased importation of cattle and swine which are needed in the expansion of the livestock industry. Unless health workers coordinate forces against this disease they could stand to lose the gains which have placed eradication in sight. Another problem exists in the swine industry where the number of swine have increased greatly while control programs for the disease in swine have not been organized as in cattle. Isolation of undulant fever organisms in the State Laboratory of Hygiene have revealed *Brucella suis* (swine organism) as the cause of many human cases in recent years.

In man undulant fever is both acute and chronic. Acute cases have chills, high fever, extreme weakness, and generalized aches and pains. These symptoms may continue for weeks if no treatment is given. Relapses are frequent and the disease may become chronic. Chronic cases may be characterized by a slight fever, weakness, vague aches, poor appetite, and loss of weight. It may cause joint and bone disease producing symptoms of arthritis.

In animals, especially cattle and hogs, brucellosis is known as contagious abortion or Bang's disease and is characterized by abortion in pregnant cows and sows. Not only is this disease important from a public health standpoint, but each year in the United States it is estimated that brucellosis costs the farmer \$100,000,000 in income through calf losses, decreased milk yields, herd replacements and breeding efficiency.

While the effective control of brucellosis as a public health problem requires the pasteurization of milk products, primarily it depends upon control of brucellosis in cattle and swine. Farm animals must be tested and reactors removed from the herd. Vaccination of calves is practical as a control measure in many states, but North Carolina has found the test and removal of infected animals more effective.

### **Tularemia**

Human cases of tularemia reported to the State Board of Health reach their peak during the hunting season. Tularemia is primarily an infectious disease of rabbits, rodents, and birds. It is transmitted from animal to animal by ticks, fleas and lice. Man is infected secondarily by contact with infected animals and insects. Dressing infected rabbits and contact with ticks (which have fed on infected animals) during the spring and summer are the usual means of transmission to man. Sometimes human cases are contracted by eating partially cooked flesh of infected rabbits or by the bite or scratch of a dog or cat (after the latter have eaten infected rabbits).

A few simple precautions, such as wearing rubber gloves while dressing rabbits, avoiding sick or "lazy" rabbits that are easily caught by dogs, and eating only well cooked rabbits which have no yellowish-white spots on their liver or other internal organs will greatly reduce the incidence of tularemia in man.

### **Tuberculosis**

Cattle tuberculosis formerly ranked as a serious public health problem in that many humans contracted the disease by drinking infectious raw milk. In the last decade this hazard has been practically eliminated. During 1953 nearly ten million cattle were tested in the United States and approximately one-tenth of one per cent (0.1%) were found infected with tuberculosis and were removed from the herds. The picture was even more remarkable in North Carolina during the same period where only one reactor was found among 113,000 tested.

The program for the eradication of tuberculosis among cattle in the United States was begun in 1917, and from that year to 1944, inclusive, 3,872,416 tuberculous animals have been removed from cattle herds throughout the country at a cost of 250 million dollars. Every county and state in the United States is now a modified accredited area, this classification meaning that

the number of reactors within a given area is less than five-tenths of one per cent. Each area must be retested at stated intervals to maintain accredited status and to prevent recurrence of this disease.

It is of great significance to note that tuberculosis of bovine origin, so often found in children as glandular, bone, and abdominal tuberculosis, has decreased 76 per cent since tuberculosis testing of cattle became widespread. In 1916 there were 3,577 tuberculosis deaths in North Carolina. In 1953 there were 402. A significant factor underlying this extensive decline in North Carolina is the eradication of tuberculosis in cattle. Veterinarians, public health workers, livestock breeders, and many others deserve much credit for this effective attack on bovine tuberculosis.

Although cattle tuberculosis has been reduced to a minimum, one must not become complacent. As long as there is a residual infection among cattle, and as long as raw milk is consumed, there is always a potential danger. Studies are continually being made to improve methods of detecting the remaining infected herds. One valuable source of information is available through meat inspection in that infected carcasses may be traced from the slaughtering establishment back to the farm or ranch of origin. Recently an investigation in this state revealed the strong possibility that the tuberculosis infected owner of a dairy herd had infected his cows. The fight to eliminate this dread disease of cattle transmissible to man must not be eased until the job is completed.

### **Anthrax**

Cattle, swine, sheep and goats are particularly susceptible to anthrax. Man becomes infected by handling the diseased carcasses and by-products of these animals. Anthrax presents a unique disease problem because the bacteria which causes the disease may develop highly resistant spores, or dormant forms, which may remain in contaminated soil for years. Cattle

grazing on such soil may become infected.

Human anthrax is contracted from two sources: Contact with infected animals on the farm and contact with infected animal hair, hides, wool, etc., used in the production of various industries. Human and animal infections in North Carolina have been infrequent.

Early in 1953 this disease caused some anxiety when it was learned that a textile plant in North Carolina was using raw foreign-imported goat hair in their textile products. Investigation revealed that the goat hair was contaminated with anthrax spores and that a danger existed not only to the health of the workers in the plant but also to livestock in the surrounding area. The plant was thoroughly disinfected and the legislature passed a law requiring that all future shipments of animal hair into North Carolina be sterilized before shipment.

### Salmonella Infections

Human intestinal infections are frequently caused by salmonella bacteria (food infection), after ingesting contaminated food products of animal origin such as poultry and other meat products. Human symptoms are fever, nausea, vomiting, and abdominal cramps. Swine and poultry have the highest prevalence of infection among slaughtered animals. Dogs are also known to be carriers of this infection. Control measures are dependent on animal hygiene, personal hygiene and the sanitary processing of foods of animal origin.

### Rickettsial Diseases

Rickettsial diseases are caused by organisms which have some of the characteristics of both viruses and the larger bacteria. This group includes Rocky Mountain Spotted Fever, Typhus Fever, Q Fever and others.

A few cases of Rocky Mountain Spotted Fever are reported each year during the summer when North Carolinians vacation at the beaches, moun-

tains, and in the woodlands, where they are more likely to contact ticks in nature or on animals. Animals, especially dogs, play a role in the transmission of this disease since they may act as a reservoir of the infectious agent. The dog tick, *Dermacentor variabilis*, is an important vector as far as transmission to humans is concerned. Dogs and other pets, including their kennels should be kept as free of ticks as possible and persons should carefully examine their clothing and bodies after working or playing in wooded areas where ticks abound.

Typhus fever has been a problem in this state for many years. There have been localized outbreaks, together with scattered cases, annually. There were 236 cases reported in 1944 but widespread rodent control and DDT dusting throughout the areas of highest incidence apparently have been responsible for a sizeable reduction in recent years. While direct infestation with fleas from rats is the most common method of human infection, some epidemiological evidence has indicated that infected fleas transported by cats may have been a factor in a few cases.

Q fever is a disease of animals transmissible to man which has been discovered only recently. It is not known to occur in North Carolina at present, but California and Texas have reported numerous human infections. Q fever was first recognized as a public health problem in Australia and Italy. Cattle, sheep, and goats are the sources of human infection, but none of these animals show symptoms nor is there any interference with milk yields. Because Q fever does not affect the livestock economy, the problem of control is most difficult. The infectious agent, *Coxiella burnetii*, is found in the milk, vaginal discharges, and placenta of infected animals. The development of an effective animal vaccine seems to be the most hopeful control measure.

### Fungus Diseases

Several fungus diseases which affect both man and animals are of public

health importance. The most common of which is ringworm. There are many species of ringworms which infect animals which may be transmitted to man; it is also possible for man to transmit the fungus to animals. Ringworm in animals is a chronic disease. Lesions on the skin of animals are usually circular, scaly and may become covered with raised crusts. Cattle, dogs and cats are hosts to the species most often transmitted to man.

Other fungus diseases such as actinomycosis, aspergillosis, histoplasmosis, and blastomycosis are found in both animals and man in North Carolina, but it is not definitely known whether they are transmitted from animal to man. The common source of histoplasmosis and blastomycosis infection for both man and animals is believed to be the soil.

### Parasitic Diseases

The most important parasitic infections in this country which are acquired from animals include trichinosis, taeniasis (pork and beef tapeworm infections), echinococcosis (hydatid disease), toxoplasmosis, and creeping eruption.

Trichinosis continues to be a public health problem in the United States because of the widespread feeding to swine of raw garbage containing raw pork scraps. These swine in turn become infected and human infection

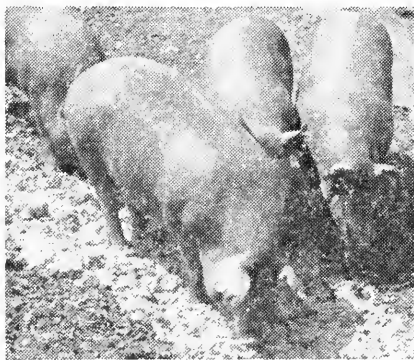
occurs by eating improperly cooked pork products which contain *Trichinella* larvae. The most effective measure for preventing trichinosis in the human population is to thoroughly cook pork products and to avoid tasting raw pork. Recently many states, including North Carolina, have passed legislation requiring that raw garbage be cooked before being feed to swine. It is hoped that this measure will prove effective in reducing human infection.

Beef and pork tapeworm infection in man is rather rare in the United States because effective meat inspection systems and advancements in proper sewage disposal have helped to break the cycle of infection from man to animals. Echinococcus infection is only occasionally seen in this county but remains a potential danger. Recently dogs in Mississippi have been found infected, a finding which deserves further investigation.

Toxoplasmosis is a protozoan disease affecting several species of animals and man. Research is underway to determine how it is transmitted. Thus far human cases have occurred in households where dogs and cats were infected, but it is not known whether animals transmit the infection to humans or vice versa.

Another troublesome disease problem in this state for which health officials have begun to collect some limited information is creeping eruption. It is caused by the larvae of the dog hookworm *Ancylostoma braziliense* which is one of the several species of hookworms of dogs and cats. This hookworm is common in the coastal areas of the southeastern states. The larvae of this hookworm are shed in dog feces and the larvae infect humans by skin penetration. Once these larvae penetrate the skin they migrate causing various degrees of skin irritation but fail to reach the blood stream and eventually mature in the intestines as is the case in their normal host, the dog.

Another recent disturbing report is a disease in humans which is caused by the migration of the larvae from



Swine Fed Raw Garbage May Transmit Trichinosis To Humans

the common dog and cat roundworm (*Toxocara canis*; *cati*). It is called visceral larva migrans and seems to occur mostly in children under three years of age through eating soil which was earlier contaminated by dogs.

### Milk and Meat Inspection

The cow is the most indispensable of all domestic animals, furnishing the important foods of milk and meat to the American table. The cow with her great contributions to human health is also a prolific source of contagious diseases for man. There are several diseases which may be transmitted from the cow to man. A few of these have been mentioned (tuberculosis, brucellosis, anthrax, etc.). To provide the consumer with a wholesome milk supply, milk must first come from healthy, disease-free animals and second, it must be collected, processed (including pasteurization) and distributed in a sanitary manner. Both depend chiefly upon the public health and veterinary professions to provide supervision over the entire production of clean, wholesome milk.

Today the great majority of North Carolina's communities have adopted modern milk ordinances which require pasteurization of milk as a safeguard against human infection, but pasteurization can only make the milk safe; it cannot raise its quality. This can only be achieved by healthy, disease-free cows where the milk is handled in a sanitary environment. Several diseases of human origin are passed from infected milkers to the cows udder and back to humans through the use of raw milk. Now that pasteurization has been almost universally accepted, serious epidemics of scarlet fever, diphtheria, typhoid, and streptococcal sore throat contracted through milk largely have been eliminated. It should be remembered that malnutrition, due to failure to consume sufficient milk has caused more ill health than all the infectious diseases transmitted through milk. At the same time the promotion of a clean, safe milk supply for human consumption is a goal toward which all



Adequate Meat Inspection Provides Disease Free Meats For Human Consumption

must strive.

The importance of meat inspection as a human health safeguard cannot be over-emphasized. Several human diseases originating from diseased meats have been briefly discussed. Fortunately two-thirds of the meat processed in this country receives ante-mortem and post-mortem (before and after slaughtering) inspection supervised by veterinarians of the U. S. Department of Agriculture. This is federal inspection and the small round blue stamp (U. S. Insp. & Passed) is a familiar sign of wholesomeness to most housewives; however, this inspection applies only to interstate shipments of meat products. The other one-third of the meat, which is slaughtered and consumed in North Carolina, may be given inspection by local public health veterinarians employed by county health departments, but in many communities in the state there is no inspection and

locally slaughtered meat may be sold without ante and post mortem inspection. There is a great need for a more uniform meat inspection program in North Carolina. The latter not only applies to the so-called "red meat products" but also to poultry processing.

At present the only inspection at most poultry plants is for sanitation. A few plants now have inspection for wholesomeness, and the trend is toward utilization of poultry which has been given this type of inspection. In all fairness to the meat and poultry packing industry, it should be stated that the majority in this industry are striving to give the public a uniformly high quality product. However, because the housewife cannot detect the wholesomeness of milk and meat products as she does in the selection of bread, vegetables and other food products, it is necessary that adequate safeguards be provided by health authorities for the consumers protection.

### **ANIMAL DISEASES IN BIOLOGICAL WARFARE**

Hardly a day passes that one is not

reminded of the possibilities of biological (germ) warfare and its effective use against people, animals and crops in a hostile attack. A number of animal disease agents communicable to man that are adaptable to biologic warfare have been mentioned in this discussion (brucellosis, psittacosis, anthrax, tularemia). One should also assume that any enemy would also attempt to greatly curtail the food supply. Diseases such as foot and mouth disease, rinderpest, asiatic Newcastle and others could seriously jeopardize the nation's vital food supply. The best protection can be afforded by all veterinarians being on the alert for such diseases and reporting them immediately to the State Veterinarian. Prompt reporting may mean the difference between control and disaster.

### **SUMMARY**

It is hoped that this brief summary will give the reader a clearer picture of the relationship of animal diseases to public health and of the role played by the public health veterinarian in the investigation and control of these diseases.

## **NOTES AND COMMENT**

BY THE EDITOR

### **PILLS WON'T REDUCE WEIGHT— ONLY CONTENTS OF POCKETBOOK**

"Sugar and spice and everything nice"—that's what most reducing nostrums are made of.

Fleecing the fat is the sole objective of most of the patient medicines and fancy devices promoted today for "slenderizing," according to Dr. Max Millman, Springfield, Mass.

Such medicines and devices are inert, useless, ineffective and a waste of time and money. People using them are looking for a short cut to weight reduction—a thing which does not exist—Dr. Millman wrote in *Today's Health* magazine, published by the American

Medical Association.

Usually such nostrums contain only syrup, flour, sugar, powdered milk, powdered eggs, vitamins, minerals and flavoring agents Dr. Millman said, adding:

"Another word to describe the reducing nostrums of today is placebo, defined in the medical dictionary as 'a make-believe medicine given to please or gratify the patient.' They are like so much sugar, salt or other foodstuff having no pharmacologic or medicinal value whatever. They do not diminish the appetite; they do not 'burn up' fat; and they do not cause weight loss.

"The regulation and restriction of

food intake and the cultivation of better eating habits still form the basis of all effective and permanent reducing.

"More people are weight-conscious today than ever before. In the past, appearance and a shapely figure were the motives for reducing. Today the factors of life and health have been added. Obesity not only predisposes to a long list of serious conditions including heart disease, diabetes and high blood pressure, but also shortens life to a shocking degree. The knowledge of these facts have become widespread and many millions of the obese are anxious to bring their weight down.

"The patent medicine trade is quick to exploit the popular interest in reducing. It victimizes the overweight with scores of remedies and devices. In addition to the candy pills, food tablets and vitamin capsules, slenderizing soaps, creams, lotions and bath salts are offered to those who prefer to take the treatment externally rather than internally.

"Vibrators and devices for massage, exercise and sweating are to be had by those who are mechanically rather than medically minded. And, finally, there are milk farms and reducing parlors (or 'slenderizing salons' as the promoters like them to be called) for those who can afford to be fleeced in more elaborate and expensive fashion.

"No weight reduction is possible unless food intake is less than the calories expended. The advertiser who tells you differently is not telling the truth. No drug or chemical can remove calories from the food you eat."

Dr. Millman pointed out some of the early and current "suggested remedies for overweight," all of which are worthless and some of which are harmful:

1. Thyroid extracts—which are ineffective against obesity and which, used unwisely, may lead to serious complications.

2. Glandular extracts.

3. Dinitrophenol—a drug which can cause cataract and blindness and the sale of which is prohibited in many

states.

4. Cathartics and purges—as they rush the food through the digestive tract so fast that it can't be absorbed properly and the irritated bowel may suffer permanent, irreparable damage.

5. Noncaloric, indigestible materials such as methylcellulose.

6. Mineral oil—as it interferes with the absorption of fat-soluble vitamins A, D and K, and the minerals calcium and phosphorus.

—————o—————

## PERSISTENT BONE PAIN MAY BE INDICATIVE OF BONE TUMOR

Persistent bone, joint or muscle pain, especially when the involved part is at rest, may be indicative of primary malignant tumor of the bone, it was reported in the Journal of the American Medical Association.

Such pain is the most significant symptom of this type of malignancy, and usually precedes any objective evidence of the new growth, the article stated, adding:

"Occasionally, when the lower extremity is involved, a limp will appear before there is any pain. The character of the pain varies from a re-current, rheumatic type of discomfort to a relatively sudden, intense pain. When it has become severe enough to produce disability, the patient usually seeks medical advice."

As is the case with any type of malignancy, the sooner a definitive diagnosis is made and the earlier adequate treatment instituted, the more favorable the prognosis, according to Drs. G. Edmund Haggart and Joseph W. Copel, Boston. The doctors are associated with the department of orthopedic surgery, Lahey Clinic.

They expressed the opinion that the majority of cases of primary malignant bone tumors can be diagnosed on the basis of a careful history, complete physical examination, essential laboratory study and x-rays. Surgical biopsy should be performed before a decision is made regarding the type of treatment, they added.

Primary malignant bone tumor is a comparatively rare condition.

## SOME DISEASES OF ANIMALS TRANSMISSIBLE TO MAN\*

Disease	Causative Organism	Common Animal Host	Common Method of Human Infection
Anthrax	<i>Bacillus anthracis</i>	Cow, sheep, horse	By contact with infected animals, hair, and hides
Amebic Dysentery	<i>Endamoeba histolytica</i>	Dog, cat, monkeys	Ingestion of contaminated food and water
Ancylostomiasis (creeping eruption)	<i>Ancylostoma braziliense</i>	Dog, cat	Through unbroken skin
Beef Tapeworm	<i>Taenia saginata</i>	Cow	Insufficiently cooked infested beef
Brucellosis	<i>Brucella abortus</i> , <i>suis</i> , <i>melitensis</i>	Cow, hog, goat, horse	Raw milk and contact with infected animals
Cat Scratch Fever	Virus (?)	Cat	Scratch
Choriomeningitis	Virus	Mouse, dogs	Contaminated Food
Coccidioidomycosis	<i>Coccidioides immitis</i>	Rodents, dog, cow	Inhalation or wounds
Encephalitis (infectious)	Virus	Birds and animals	Mosquito bite
Histoplasmosis	<i>Histoplasma capsulatum</i>	Dog? Cat?	Inhalation
Hydatid Disease	<i>Echinococcus granulosus</i>	Dog, cow, sheep	Ingestion of parasite eggs from dog feces
Leptospirosis	<i>Leptospira</i> (species)	Dog, rat, hog, cow, cat	Ingestion; skin abrasions
Plague	<i>Pasteurella pestis</i>	Rodents	Flea bite
Pork Tapeworm	<i>Taenia solium</i>	Hog	Insufficiently cooked infested pork
Psittacosis	Virus	Psittacine birds and domestic fowl	Contact
Q Fever	<i>Coxiella burnetii</i>	Cow, sheep, goat	Raw milk and contact
Rabies	Virus	Dog and other animals	Animal bite
Rat-Bite Fever	<i>Spirillum minus</i>	Rat	Rat bite
Ringworm	Many fungus species	Dog, cat, cow, horse	Contact
Rocky Mtn. Spotted Fever	<i>Rickettsia rickettsii</i>	Rodents, dogs	Tick
Salmonellosis	<i>Salmonella</i> (species)	Cow, dog, chicken, rat	Infected meats and food
Swine Erysipelas	<i>Erysipelothrix rhusiopathiae</i>	Hog, fowl, fish	Skin abrasions
Tetanus	<i>Clostridium tetani</i>	Intestine of horse and other animals	Skin abrasions
Toxoplasmosis	<i>Toxoplasma gondii</i>	Dog, cow, hog	Unknown
Trichinosis	<i>Trichinella spiralis</i>	Hog, rat	Improperly cooked pork
Tuberculosis (bovine)	<i>Mycobacterium tuberculosis</i>	Cow, hog	Ingestion of infected raw milk or meats; contact
Tularemia	<i>Pasteurella tularensis</i>	Rabbit, other animals	Skin abrasions and tick bite
Typhus Fever	<i>Rickettsia mooseri</i>	Rat	Flea bite

\* There are over eighty animal diseases transmissible to man. A few of the important ones in North Carolina and the United States are listed above.



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# The Health Bulletin

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The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
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The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
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Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## OUTLINE OF THIRTY YEARS OF PUBLIC HEALTH DENTISTRY

EARNEST A. BRANCH, D.D.S., Director,  
Division of Oral Hygiene,  
North Carolina State Board of Health

I am thankful for the first word of this subject assigned to me—that an outline is all that is expected. Not being sure whether your program committee meant for me to line out some of the main developments in public health dentistry during the past thirty years or to relate my own experiences during my thirty years, I am going to do both at the risk of some repetition and of mixing trends with personal experiences and vice versa.

The first part will be brief, and I am going back almost forty years. It was in 1918 that dentistry first became a part of a state public health program. Of course, I take great pride in the fact that the State was North Carolina. Largely responsible for introducing dentistry into a state public health program were two dentists, Dr. Martin Fleming and Dr. J. C. Watkins, and a physician, the late Dr. George Cooper, who was Director of the State Board of Health's Division of Maternal and Child Health. Now, all forty-eight states, the

District of Columbia and four territories have dental health programs.

The amount of that 1918 appropriation for public health dentistry was very small, in all probability less than \$10,000. In 1940 figures obtained from twenty-three States showed an approximate expenditure of \$412,000, while expenditures reported from forty-one states in 1950 amounted to more than \$1,892,000.\* An even more striking and encouraging comparison is afforded by the 1953 appropriation by a single state, Tennessee, of \$300,000 for its dental program. If any of you can top that, speak up.

Another noteworthy event prior to 1925 was the appointment of the first dental member of a State Board of Health—by that I mean to the Board of Directors, or policy-making body. This time the honors go to Virginia. North Carolina was a close second. I am sure that many states have now followed suit.

Presented before Dental Health Section, Southern Branch of the American Public Health Association, St. Petersburg, Florida, April 22, 1954.

\*DISTRIBUTION OF HEALTH SERVICES IN THE STRUCTURE OF STATE GOVERNMENT, 1950, Part three, U. S. Department of Health, Education, and Welfare, Public Health Service.

During the 1920's the Sheppard-Towner Act, "for the promotion of the welfare and hygiene of maternity and infancy,"\* by which funds administered by the Children's Bureau were made available to the several states, provided the states themselves appropriated money for this purpose, gave an impetus to oral hygiene in many states. Funds were terminated in 1930.

Relax. I am not going to dwell, year by year, on the dim and distant past. In fact I am going to skip to 1931. I believe I am safe in saying that the dental activity first achieved division status with a dentist as director in 1931. At least that is when it happened in North Carolina. Today many State Health Departments accord this recognition to their Dental Divisions. During the thirties the main job was one of securing recognition and support from professional groups and appropriating bodies.

The 1934 Mouth Health Survey sponsored by the American Dental Association was a real shot in the arm for public health dentistry. Its place in the sun was established by startling facts and figures. Conditions that were well known and recognized by the small and struggling band of public health dentists became the concern of organized dentistry as never before.

Federal funds again became available in 1936 through the Social Security Act, this time in more substantial amounts. The availability of these funds marked the real beginning of public health dentistry in many states and greatly stimulated and strengthened existing programs. It should be noted that these funds are now being reduced and withdrawn. However, the dental programs which they helped to inaugurate and maintain over a period of years have proved their worth to such an extent that state and local funds will be forthcoming to assure their continuance.

An event of importance in 1937 was

\*Salzmann, A.A. PRINCIPLES AND PRACTICE OF PUBLIC HEALTH DENTISTRY. Boston: The Stratford Company, 1937.

the organization of the American Association of Public Health Dentists. This took place in Atlantic City during the annual meeting of the American Dental Association. I believe Jim Owen was the chief instigator and Dick Leonard was elected to serve as the first president. It was good to get together to discuss problems and compare notes.

After five years of flying high, wide, and handsome, World War II brought us to with a jolt—two jolts, in fact. The draft rejections because of physical defects, with dental defects taking first place, again pointed up the seriousness of dental health conditions and the great need for preventive and corrective dentistry for children. The awareness of this need and the loss of dental personnel to the armed services combined to make an extremely baffling situation for the next few years.

However, the wind was not an entirely ill one. We like to believe that the great awakening of the public during the last ten years to an appreciation of the importance and value of good dental health has been due to our educational efforts and activities. Honesty compels us to give some of the credit to the superior dental care given the service men—for many of them, their first. Now they want it for themselves and their families.

This brings us to the late forties and early fifties. The headline is Fluoridation. This I need not discuss except to point out the concomitant value of focusing interest on dental health. Even the opponents—perhaps I should say particularly the opponents—will certainly see to it that their children's dental health does not suffer for lack of drinking fluoridated water. I will say that I, personally, look forward hopefully to general acceptance of this preventive measure in the near future.

For an outline of my thirty years I have reviewed the yearly report of the Division of Oral Hygiene and have selected certain events and trends as being significant of the development of public health dentistry.

Let me say that I am glad that my

first five years were spent as a county school dentist. My experiences in working with children during those years were the best preparation I could have had for planning and directing our program of dental health education. I learned, of course, the children's great need for dental services. I also learned about children and ways of working for them and with them. Most of all, I realized that our greatest task was to allay the children's fears of the dentist—that they must not be coerced or rushed into the dental chair. It took time and patience to work for the timid child while holding her in my lap, but it paid off in her later attitude of confidence in me and in dentists in general. My patients of those first five years still love me and appreciate good dental service—and some of them are in the State Legislature.

When I joined the staff of the State Board of Health in 1929, one of my first rules was that no staff member was to hurry. Establishing a friendly feeling on the part of the children for the dentist and dentistry was our first objective. I realized that there was a real task ahead in public relations when I visited a one-teacher rural school and found that all of the children had taken to the woods at my approach. We know that much has been done in this respect when teachers write that the children beg to go to the school dentist and are sorry when he has to pack up his equipment and move.

I have already mentioned 1931 and the establishment of our Division. The 1934 survey confirmed our belief in the need for getting children to the dentists. In our State eighty-five per cent needed dental attention, while fifty-four per cent had never been in a dental office. This called for increased emphasis on education. The following were efforts in that direction:

In 1935 Little Jack made his debut and, since that date, the puppet show has been a part of our program. On every school day for nineteen years the show has been presented in three elementary schools.

In 1936 we held the first session of

our Institute of Public Health Dentistry at the University of North Carolina to train our staff dentists for the teaching part of their program. Some of the subjects offered in the Institutes, which were held every summer for eight years, were child psychology, methods of teaching, nutrition, visual education, public speaking and sociology.

In 1938 the service of supplying teachers with supplementary dental health teaching aids was inaugurated. This material was featured at an exhibit at the St. Louis meeting of the American Dental Association.

With so much spreading of our wings, we needed more space; so in 1941 we moved into our new Oral Hygiene Building. By 1942 we had a staff of thirty-four public health dentists. That year dental corrections were made for 76,087 under-privileged children, while 186,000 (an average of 1,000 each school day) received dental health instruction in their own classrooms by the dentists.

During and after the war years, in an attempt to offset to some extent the losses in dental personnel, efforts were redoubled to stimulate dental health instruction by the classroom teachers. Success in this endeavor was indicated by the marked increase in the amount of educational material distributed, for the material was sent out only in response to requests. This was then and is now our policy. Educational materials were also supplied to the dentists in private practice, and they were urged to give preference to child patients.

1948 marked the adoption of the preventive treatment of the topical application of sodium fluoride to the children's teeth. This treatment was included in the services rendered by the dentists on our staff, and a two per cent solution was supplied to the dentists in private practice.

Between 1950 and the present the fluoridation of public water supplies has been promoted with considerable success. When I left home, 600,000 people in 16 towns and cities were drinking fluoridated water. Many other communities are in the process of installing

the equipment or have the matter under consideration.

1951 stands out as date of importance in North Carolina for that year all of our one hundred counties provided in their budgets for dental programs. This is gratifying evidence that the people are convinced of the value of good dental health and of the need for public health dentistry.

And now I want to make my speech.

Not long ago a Parent-Teacher Association invited me to speak and asked me to submit to them three subjects to choose from. I gave them three high sounding titles, not caring which they selected, because I knew all the time that the speech would be the same. We all have one theme: the prevention of dental diseases and of systemic diseases of dental origin through education and the early correction of dental defects.

## OUTBREAK OF BACILLARY DYSENTERY IN AN ELEMENTARY SCHOOL

By R. J. JONES, M.D., M.P.H.  
Health Officer, Lenoir County, N. C.  
Kinston, N. C.

This is a report of approximately 333 cases of bacillary dysentery occurring in an elementary school in Kinston, North Carolina.

The first meal of the school year was served in the school cafeteria on September 4, 1953, and all children affected became acutely and violently ill on September 5th and 6th. The symptoms were high fever, abdominal pain, headache, watery or loose stools with blood, nausea and vomiting. Several children were hospitalized. There were no deaths among the approximately 333 cases.

The school cafeteria is approved and has been in operation for almost 20 years, without a previous known food outbreak. The cafeteria supervisor has been employed there for 14 years. All the food-handlers were experienced workers, having worked from one to eight years in this same cafeteria. This cafeteria has had a Grade "A" rating for many years, and under routine Health Department inspection. The writer learned of this outbreak when he visited the office of Dr. W. E. Keiter and Dr. J. H. Arnold about 11 A.M. Sunday morning, September 6th. Their office was overrun with the white children in trouble. Other physicians soon began calling the writer that they had

been swamped for the past 12 hours. Specimens of stools were collected from several typical cases around the city about 12 noon Sunday. These were sent by air to the State Laboratory of Hygiene, State Board of Health, Raleigh, N. C., for culture and identification—which finally proved to be *Shigella Sonnei* I. All physicians were written that afternoon to please report all cases to the Health Department at once.

Entrance to the cafeteria could not be made on Sunday; so early Monday morning investigation of the cafeteria began. Announcements were made early Monday morning over the local radio stations for every home that had a child sick from dysentery to please call the Health Department at once. During the day 257 calls were taken reporting cases. The school had 1,000 students (1st through 6th grades) in attendance the Friday, September 4, that the meal was eaten. Approximately 800 persons ate. The first grade went home before lunch and were not infected. Several teachers, one patron and one cook who ate there became ill along with the students.

The meal consisted of tuna fish salad, packaged potato chips, bakery rolls, apple sauce, cookies and milk. Of course

the tuna fish salad was immediately suspected, but as usual, none of it was left for examination. However, the storeroom was entered, and several representative cans of the tuna fish were taken, along with all other ingredients, mayonnaise, relish, etc., from which the tuna fish salad was prepared, and transported to the State Board of Health Laboratory. This included the potato chips, rolls, apple sauce, cookies and milk. A complete sanitary survey was made of the cafeteria and the entire school.

We worried over water for several days, as some plumbing changes had been made during August. However, all water and food specimens were reported negative during the next several days.

School was dismissed for the entire week, awaiting the epidemic-logical investigation, as well as to await recovery of so many students.

Early Monday morning all food-handlers were on the job and apparently well. However, one food-handler did confess illness with dysentery later in the day and was treated by a physician. Stools and rectal swabs were collected that day from all food-handlers—and these food-handlers gave conflicting stories on the method and time of preparation of the tuna fish salad, and all asserted they washed their hands well. In final analysis the boiled eggs were chopped by hand the day before the salad was mixed. They were said to have been kept under fairly good refrigeration after chopping and until the salad was mixed. The salad was mixed BY HAND in three large bowls, supposedly about 10 A.M. in the morning of the serving from 11:40 to 1:30 o'clock. Several repeat mixings were necessary before the 800 were fed. All food-handlers participated in the mixing, and all bowls looked alike. It could never be determined which cook mixed what bowls and when.

The results were that three food-handlers had positive stools and rectal swab for *Shigella Sonnei* Type I during the outbreak, but only one of them

was clinically ill at the time. They all denied any illness similar to the outbreak in the past. Several food-handlers had learned of the outbreak before they came to work Monday morning, and had talked about it before the Health Department workers could get them assembled.

One cook carried some tuna fish salad home. Her three children became ill with dysentery, confirmed by stool culture.

Questionnaires were sent to every home (257) that called in, and they were returned in almost every instance. Symptoms were the same, and everyone had eaten tuna fish salad.

The classes were affected about equally, with a thirty to fifty per cent attack rate. No class was spared (except the 1st grade that did not eat). The time the children ate, from 11:40 to 1:30 o'clock, had no significant bearing on the incidence, as each room was surveyed for attack rate and time of eating meal as soon as school reconvened after one week's absence. Almost all children recovered in one week. The lunchroom was closed for one month, during which time all food-handlers (those positive and negative) had repeated negative stool cultures.

It should be stated that many cases of bacillary dysentery had been present in the community all during the summer.

The conclusion reached was that at least 333 children became acutely ill with bacillary dysentery after eating lunch at school on September 4, 1953, and that the infecting organism was *Shigella Sonnei* Type I, which was introduced into the tuna fish salad from contaminated hands of food-handlers, probably mostly from the boiled eggs chopped by hand, the day before the mixing of the salad. Adequate hand-washing would likely have prevented the outbreak, even though the egg and celery chopping and salad mixing was done by hand. There were only comparatively few secondary cases reported in the homes. Preventive advice was

given to the homes through the radio and press.

The lesson impressed upon all food-

handlers in this city and county was "Proper Handwashing" and "Never Mix Food With Hands."

## THE RESTAURANT INDUSTRY LOOKS AT SANITARIAN TRAINING

By M. M. MELVIN, Executive Vice President  
North Carolina Association of Quality Restaurants  
Raleigh, N. C.

The training of sanitarians is one of the most important factors relating to the operation of restaurants. I realize that tremendous progress has been made and no one is more conscious of this progress than the speaker. When the sanitation program was in its infancy, trained sanitarians were unheard of; consequently, the development of the sanitation program as it relates to the food industry was carried on by untrained people—people like myself, who had to learn from scratch the fundamentals of good food sanitation. From the beginning, however, tremendous progress was made, in spite of handicaps, in the development of a sanitation program for the food industry. It was the pioneer sanitarians who were conscious of the need of an expanded public health program. It was the same pioneer sanitarians here in North Carolina who contributed much in selling a public health program to county and municipal officials and the Legislature.

Many costly mistakes were made, resulting in the unnecessary expenditure of large sums of money by the industry. This was inevitable, as every industry has spent money unnecessarily before developing the know-how to carry out a program of industry betterment. This applies to the auto, refrigeration, air-conditioning, radio, television and every other industry alike. It is a different story today. The sanitarians are dealing with people who are better edu-

cated and have a better background and people who are desirous of raising the standards of their own industry. The sanitarian today must be a man who has studied even in minute detail the ramifications of the operation of a food establishment. He should be a super salesman. He should be a man with a pleasing personality. He should be a man of positive disposition. He should be a man who is conscious of the part that public relations play in the further development of the food industry's program of self-betterment, and in the further development and expansion of a good public health program. He should be a man with technical and practical know-how. Industry receives with open arms an intelligent, alert sanitarian who is capable of assisting the operators and their employees in the planning, building and maintenance of a food establishment. Industry today looks with contempt upon the untrained sanitarian, or the sanitarian who has not developed to a point where he is thoroughly competent to handle trying problems diplomatically.

It costs a tremendous amount of money today to purchase the land, to construct the building and to equip a modern restaurant. In many instances the cost runs into hundreds of thousands of dollars. When a man spends that kind of money, he needs intelligent and competent advice.

The sanitarian of today is indeed in a fortunate position, because facilities are now available which will enable him to learn very quickly, since he has



at his fingertips information to help with every problem. First, it is indeed fortunate that we have schools, like the School of Public Health here at the University of North Carolina, which are doing an outstanding job in developing and training sanitation personnel. Then there is the National Sanitation Foundation carrying out its great research program; your State Health Department, with a staff of trained sanitarians who are always available to aid and assist in problems relating to the food industry and the many highly trained county and city health officers and sanitarians who will assist the new sanitarian in any problems that he may have. There are the U. S. Public Health Service with its research facilities for the development of sanitarians and a better sanitation program; the armed forces of the United States with their programs of training sanitation workers; the availability of training films, slides and literature. All of these aids are available to sanitarians for the asking. Then industry has developed greater skill and know-how in the manufacture of modern equipment, supplies and facilities, making the operation of a food establishment as near foolproof as possible. Restaurant supply houses have contributed much through their staffs of trained engineers, who are striving constantly to make better layouts which will make it easier for the sanitarian and the operator.

The restaurant industry looks to sanitarians for leadership in assisting the industry in the training program for its workers. Much progress has been made in this field. Here in North Carolina the State Board of Health and county health departments, in cooperation with the North Carolina Association of Quality Restaurants, have conducted literally hundreds of food service training programs. These have benefited industry tremendously. The industry is looking to you, the sanitarians, today to develop and expand further the training program of food service workers. In order to set up and execute training programs for restau-

rant workers, the sanitarian must be an informed person, a person who is competent to set up such training programs and carry them out so ably that industry will feel that the greatest friend they have is the sanitarian.

The sanitarian is one of the key figures in bringing about increased appropriations. If you are carrying out a good sanitation program in your community, you are making your contribution toward a larger appropriation by the Legislature and by your local appropriating authorities. When you sell your program to the people, the people will sell you and your program to the appropriating authorities. I hope to live to see the time come when the sanitarians will be paid salaries commensurate with the services a good sanitarian renders in his community.

I compliment and commend those sanitarians who are alert and are conscious of the needs of the food industry and who are working with the restaurant industry to further develop the training program to a point where every operation will have at its head a competent manager and a staff of trained workers. This can be done if the sanitarians themselves will set up, to supplement the training facilities now available, an in-service training program for all sanitation workers. It is too much to expect a sanitarian to remain within the bounds of one county and then know all about the programs which are designed to benefit public health, the public and industry alike.

Provision should be made, if possible, in the budgets of state and county health departments to provide funds for defraying the expenses to meetings and in-service training schools, because it is unfair to the sanitarian to expect him to develop his greatest potentialities if he is not given an opportunity to learn more about his duties, responsibilities and opportunities in the development of a greater sanitation program.

I know of no better way of developing greater techniques in carrying out the many responsibilities and duties of the sanitarians than to inaugurate a

program of in-service training which is practical and will help every sanitarian to develop into a person who will be held in high esteem by the food industry.

Too little credit has been given to the part that public health and sanitation play in bringing more industry into the State and expanding and enlarging our present industry and in the promotion of a greater flow of tourists into North Carolina and helping the industries catering to the tourists with the many problems as well as opportunities in giving our visitors the very best in accommodations. The health departments are doing much to supplement the fine program for bringing more industry and more tourist dollars into North Carolina, which is so ably carried out by the Department of Conservation and Development. Both agencies have great opportunities and are doing a fine job, but I am confident that a great deal more can be done by the wonderful leadership representing them.

Here in North Carolina, we are indeed fortunate in having men like Dr. Roy Norton, Maurice Jarrett and many others who have worked so closely with industry in the development of the finest sanitation program to be found anywhere. It is my cherished hope that you, the sanitarians from other states, have the cooperation of your food industry and the restaurant associations in your states. Teaming up and working together provide the solution to our mutual problems.

I am grateful for the wonderful cooperation that I have received from the State Health Officer and his staff and from the county health departments and their staffs because this kind of cooperation is making tremendous progress in developing an even greater food industry.

I have talked long about cooperation

and educating and training the sanitarian, the operator and the worker; however, enforcement definitely has its place in the development of a greater industry. Those operators who have proven that they are not interested in maintaining high standards of sanitation should be required to either clean up or close up. There is no reason in 1954 why a dirty restaurant should be permitted to operate. A dirty restaurant reflects equally upon the health departments and the food industry.

Let me say again that we congratulate you, the sanitarians in public health, for the great strides that have been made. We should like to compliment the University of North Carolina for its fine School of Public Health, the State Board of Health and county health departments, the U. S. Public Health Service, the National Sanitation Foundation, the restaurant owners and others who are helping to build a greater industry.

In closing, let me recite a little poem which I think is appropriate because those of you who have worked with the operators realize full well that they, like yourselves, have many problems which are hard to solve. The title of the poem is:

#### "HOW TO GET TO HEAVEN"

A man stood before the Heavenly Gates  
His face was scarred and old.

He stood before the man of fate  
For admission to the fold.

"What have you done?" Saint Peter  
asked

"To gain admission here?"

"I was a restaurateur, sir, for many,  
many a year."

The pearly gates swung open wide  
When Saint Peter touched the bell.

"Come in and choose your harp," he  
said

"You've had your share of hell."

## NOTES AND COMMENT

BY THE EDITOR

### DR. CRUMBINE, PUBLIC HEALTH PIONEER, PASSES

Dr. Samuel J. Crumbine, famous "frontier doctor" and public health pioneer, died July 12 at the age of 91 in New York City, where for the past three years he had been consultant to the Public Health Committee of the Paper Cup and Container Institute, Inc.

Since the turn of the century, Dr. Crumbine was a prominent member of many outstanding state and national health organizations and a pioneer in many health crusades where public health first began to be recognized as a significant civic problem. His most effective crusades included campaigns against the common drinking cup, the housefly and the roller towel.

Dr. Crumbine, a resident of Kansas for thirty-eight years, made that state a leader in public health progress, far outstripping older and wealthier states in the North and East and even the Federal Government. With the cooperation of such great Kansans as William Allen White, he pioneered in the struggle against tuberculosis, diphtheria, typhoid and infantile paralysis.

He was born on September 17, 1862 in a log cabin in Emlenton, Pennsylvania and reared in an orphanage for children of Civil War casualties. At 16, he was apprenticed to a druggist in Sugar Cove, Pennsylvania, before he moved on to medical school.

In 1885, with a newly won medical degree from the Cincinnati College of Medicine, he went West to set up practice in Dodge City, Kansas, one of the most unhealthy communities in the country. Dodge City was then earning its reputation as "Wild and Woolly Dodge." Its Bat Masterson and Big Bill Tighlman were the fastest-drawing marshalls in the land; its Boot Hill Cemetery was the most active spot in the community, and Dr. Crumbine—doctor, dentist and county coroner—one of its busiest and most respected citizens.

In 1900, he was named to the Kansas Board of Health; four years later he became its secretary and executive officer. It was then that he launched his successful campaign against the common housefly and coined the phrase, "Swat The Fly," at a baseball park one day. Soon citizens all around the state joined in the fight with screens, swatters and fly paper.

His next target was the common drinking cup. Shocked by the sight of a little girl drinking from a common cup just used by a coughing man, Dr. Crumbine urged state-wide regulation to replace the public drinking cup with the newly invented paper cup. As a result of his tireless efforts, the common cup soon went the way of the other outlaws for which Dodge City and Kansas had been noted. The grimy roller towel quickly followed.

Throughout his tenure as state health official, he gained stature as both educator in, and bold fighter for, the improvement of public health. And he continued to communicate his health messages via other effective slogans, such as "Don't Spit On The Sidewalk," and "Sleep With Your Windows Open."

From 1911 to 1919 he held the additional post of dean of the University of Kansas Medical School. During World War I, under his direction, Kansas was the first state to launch a fight against venereal disease.

In 1923, Herbert Hoover, then president of the American Child Health Association, called in Dr. Crumbine as medical consultant. In 1925 he became its General Executive. In 1930, Mr. Hoover, as President of the United States, again called on Dr. Crumbine, this time to make a three-month survey of children's health conditions in Puerto Rico. As a result of his report, the President set up a six-year plan for the rehabilitation and relief of children in Puerto Rico.

Dr. Crumbine gave up his post as executive of the American Child Health

Association in 1936. It was in no way a retirement. In 1948, at the age of 86, he wrote his first and only non-technical book, the autobiographical "Frontier Doctor." For the past three years he has been consultant to the Paper Cup and Container Institute, Inc.; within the last year of his life he wrote many articles on his experiences for national magazines.

At one time or another he also served as president of the Association of American Food, Dairy and Drug Officials and of the Conference of State and Provincial Boards of Health.

#### PUBLIC HEALTH NURSING IN THE HOME ACCIDENT PREVENTION PROGRAM

In considering the contributions of public health nursing toward the prevention of home accidents, Helen L. Fisk has stated in a report before the Joint Session of Public Health Nurses and Health Education sections of the American Public Health Association at the 83rd annual meeting in New York City, November 11, 1953 that, "Accidents kill and cripple more of our children than all the infectious diseases of childhood put together." To save our children, parents must understand the accident problem and be as concerned about it as they are about any contagious disease.

It has been assumed that public health nurses have always included some phases of home accident prevention in their nursing services but there must be a more concerted effort in our education in accident prevention for the parents of our children.

This discussion is limited to some of the ways in which the educational job can be done by the public health nurse, in an accident prevention program during the maternity cycle and the first four years of parenthood. These observations are made in the home setting which is an invaluable aid to the nurse in giving assistance to the family.

(1) Observe home environment in relation to its adequacy and safety for the family and for the practices of living.

(2) Encourage the father to provide for his wife a home which is safe and meets the special needs of the pregnant woman.

(3) Help family to make physical, psychological and social adjustments which are comfortable and within their capacities.

(4) Actions speak louder than words. The alert nurse will be aware of the feelings which underlie behavior and more effective teaching is done when she works with causes rather than symptoms.

(5) Nurse may act as a mother substitute in providing understanding care, thereby enabling the patient to become more motherly herself and better able to meet the demands and dependent needs of her baby.

(6) Replace fears and superstitions regarding pregnancy with valid information.

(7) Give anticipating guidance, familiarize parents with growth and development.

The public health nurse is working toward an environment and relationships of people which will give the child the opportunity to realize his potentials for health.

#### SERVICES AVAILABLE FROM THE ACCIDENT PREVENTION SECTION OF THE NORTH CAROLINA STATE BOARD OF HEALTH

*I. Services specifically available for local health departments:*

1. State-wide and local statistics on fatal accident incidence. Assistance in the design and operation of surveys, reporting systems, and other special epidemiological studies leading to information about non-fatal accidents in the local health jurisdiction.

2. Utilizing a team approach, *in-service staff education* for local and district health department staff members. Disciplines represented in the team include nursing, sanitation, health education, and epidemiology.

3. Assistance in the development of local health department *accident control programs*. This would include assistance in the mobilization of all com-

munity resources for participation in the safety activity.

4. Assistance in the development and procurement of *educational* and other *safety program materials*, visual aides, (motion pictures, slides, film strips, posters, and exhibits) and related safety program needs.

5. *Formal educational* experience for public health workers in the field of accident prevention through the sponsorship and participation in special courses, short and topical courses, institutes, and work shops.

6. *Create wider understanding* of accident problems and their solution through sponsorship of safety techniques and philosophies in schools of public health, nursing schools, medical schools and other professional training institutions.

II. *Services available to all state and local agencies, groups, organizations, and individuals:*

1. *Information* about accidents and safety activities. This includes the dissemination of information through the mass media, radio, television, newspaper, magazines, trade papers, professional journals, etc.

2. *Team participation* in program activities of civic, professional, volunteer and other groups.

3. *Cooperation with and support* of all safety activities carried on in North Carolina and the United States.

**FEEDING THE BABY**—From the Spring, 1954, issue of "Briefs" published by the Maternity Center Association of New York City, we came across the following which seems to make sense:

"If a baby is allowed to fill himself to the brim at every feeding, most feeding problems vanish. This is the finding of Dr. Charles A. Tompkins and Fletcher D. Slater of the University of Nebraska, following x-ray studies of the digestive process in babies. In the January 1954 issue of *Parents' Magazine*, they list five important rules for baby feeding which have been developed from their studies.

"1. *Feed the baby in an upright position.*

"The x-rays showed that if he is fed lying down, a large air bubble forms on top of the milk in his stomach. It cannot escape so he never gets completely full when he is fed in a lying down position.

"2. *Feed him only when he cries for it.*

"In the tiny baby, who only sleeps and eats, if things are going along in nature's way, he eats till he's full and then goes to sleep. He sleeps till his stomach gets empty and hunger pains wake him up. Then he wants to eat again. So in feeding a little baby, wait till he cries. In the newborn, this crying will be synonymous with waking, if he was full when he went to sleep and if he wasn't wakened before he awoke with hunger pangs. If fed before he's hungry, he doesn't go to sleep properly simply because he won't eat a full meal. A full stomach diverts blood from the brain and helps induce sleep.

"3. *Feed him promptly when he does cry for it.*

"Some mothers let a baby cry for maybe a half hour before feeding in the mistaken notion that crying is good for the lungs or because it may not be convenient to feed him then. Or they may be waiting for a predetermined time, an artificial schedule that doesn't meet the baby's needs. When the baby cries, his stomach gets filled up with air and he gets too tired to eat properly. Between the air and the fatigue, he'll eat only a partial meal and then drop off to sleep before he's full. A baby, when fed too late, usually wakes up before he's supposed to, for the simple reason that he wasn't filled full and hunger wakes him up before his sleep is out.

"4. *Feed him with a nipple that does not starve him.*

"For mothers who prefer to bottle feed their babies, Tompkins and Slater warn that tiny babies who have to work hard on a nipple often get tired before they are full and go to sleep. Then the baby wakes up hungry too soon and becomes another feeding problem. The

remedy is simple, make a hole large enough so the baby doesn't have to work too hard for his dinner.

*"5. Feed him all he wants.*

"A baby cannot take too much. We don't know how much milk a breast fed baby gets. We don't need to know with either breast fed or bottle fed babies. Just give them all they want. When a baby finally stops sucking and all the other factors are under control, he is full."

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**PARENTS' UNCONSCIOUS IMPULSES CAUSE ANTISOCIAL BEHAVIOR IN CHILDREN**

Parents' unwitting sanction or indirect encouragement is a major cause of, and the specific stimulus for, such antisocial behavior as recurrent fire-setting, stealing, truancy, vandalism, unacceptable sexuality, and serious recurrent criminal behavior displayed by young delinquents or their adult counterparts, the psychopaths, in the opinion of Dr. Adelaide M. Johnson, Rochester, Minn., and Dr. S. A. Szurek, San Francisco.

This conclusion resulted from studies of delinquents and their parents carried out during the last decade, the doctors wrote in the *Journal of the American Medical Association*. The delinquencies under consideration were those arising in apparently "normal" families of good reputation, and not those largely determined sociologically in slum areas or juvenile gangs of any economic level, they stated.

"By means of study and concomitant treatment of the parents as well as of the child involved in the antisocial behavior, it becomes unmistakably evident that one or occasionally both parents derive unconscious, and less frequently conscious, vicarious gratification of their own poorly integrated forbidden impulses in unwittingly sanctioning and fostering such behavior in the child," the doctors said.

"In every patient brought for treatment, in whom simultaneous intensive study of the parents was possible, the

child's defect in conscience was traceable to a like defect in the parents' own poor resolution of unconscious impulses to similar antisocial behavior. Thus, just as normal parents derive vicarious gratification from good behavior in their children, parents who have poorly integrated forbidden impulses apparently derive gratification from the bad behavior of their children."

Often a parent unconsciously may select only one child in the family to be the scapegoat for such feelings, the doctors pointed out. The formulas for the unconscious selection of the unfortunate scapegoat are multiple, as are the devious patterns for impressing him into his tragic role.

"A child's conscience is made, not born," according to the doctors. "It is not inherited ready-made, but is developed, especially during the first six years of life, primarily through identification in great detail with the total behavior of parents. This identification or mimicry embraces the conscious and unconscious operations of the parent. To an equal extent, conscience develops from the parents' conscious and unconscious image of the child and from their concepts and hopes for the child.

"The psychopathic personality or 'psychopath' of later years is the grown-up delinquent child with defects in conscience, who is in court for theft, burglary, forgery or worse. In every such instance providing us opportunity for careful study, a long history is revealed of parental sanction of antisocial offenses."

The doctors pointed out that children are masters at sensing parental interest or gratification, however subtle, at a tale of naughtiness. Even if punishment comes after the interest-arousing narrative, the damage has been done. If even disguised parental pleasure preceded the spanking, the child will repeat the performance. To please mother or father is worth the punishment, although the contradiction between seduction, through evincing pleasure, and the spanking is impossible for the child to reconcile, they said.

The unearthing of parental sanction for antisocial behavior in children is one of the most formidable challenges that confront psychiatrists, the doctors stated, adding:

"Treatment of the parent is fraught with difficulty. If the parent has provided conscious sanction of the child's delinquency, treatment is usually impossible. If the parental role was unconscious, the uncovering of the parents' problem is a miserable or hazardous ordeal, and at times the therapy requires hospitalization."

When parents become aware of the cause for their child's delinquency, they may develop neuroses, the doctors stated. Troublesome as these neuroses may be, they are preferable to antisocial behavior, with its threat of perpetuation through generations.

"It is advocated that there be a disseminated knowledge of these origins of delinquency, aimed at the erection of parental conscience barriers against the fostering of vicarious misbehavior, since such behavior may be transmitted from generation to generation through interpersonal living," the doctors stressed. "Individual neuroses that may result, regardless of their severity, are more amenable to treatment than is the delinquency complex."

Dr. Johnson is associated with the section of psychiatry, Mayo Clinic, and Dr. Szurek with the University of California School of Medicine and the Langley Porter Clinic.

#### DESCRIBE CAT SCRATCH DISEASE IN 160 PATIENTS

One hundred sixty cases of cat scratch disease, a relatively new clinical entity which may resemble other serious diseases, were reported in the *Journal of the American Medical Association*.

The majority of the patients afflicted with the condition had had some contact with cats and were in the younger age groups, according to Drs. Worth B. Daniels and Frank G. MacMurray, Washington.

Many of the patients had skin lesions that persisted from two weeks to two

years, the doctors stated. Some of the lesions became as large as golf balls, and 80 per cent of the patients had such general symptoms of infection as chills, headache, generalized aching, weakness, nausea, abdominal pains and fever.

The doctors pointed out that in many of the cases cat scratch disease mimicked such diseases as infectious mononucleosis, tuberculosis, tularemia, malignant tumors, and infected cysts. A definite diagnosis of cat scratch disease was made in each case by means of a specific skin test, they added.

The exact causative factor of the disease is not known, the doctors stated. Although the symptoms will disappear spontaneously, use of some of the antibiotics may be beneficial in treating the disease.

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#### POLIO SUSCEPTIBILITY MAY BE INCREASED BY ABSENCE OF TONSILS

Removal of tonsils and adenoids may increase susceptibility to bulbar and bulbospinal forms of poliomyelitis, it was stated editorially in the *Journal of the American Medical Association*.

Further study of this problem was urged by the editorial, which stated that data have suggested: (1) that the mere absence of tonsils and adenoids, regardless of the time of their removal, leads to increased susceptibility to bulbar and bulbospinal forms of polio, and (2) that if poliomyelitis strikes within a matter of days after an operation to remove the tonsils and adenoids, there is a greater risk that the patient will have the bulbar type and a severer illness.

"The relation between tonsillectomy and poliomyelitis and between the presence or absence of tonsils and poliomyelitis has been the subject of discussion for some years," the editorial stated.

"Data presented appear to suggest that the time when tonsillectomy is performed when related to the onset of poliomyelitis may be of less significance than the mere fact that tonsils are absent. Settlement of this aspect of

the tonsil-poliomyelitis problem is of considerable importance to the entire medical world and merits further study in view of the growing belief that recent tonsillectomy may lead to increased susceptibility to the bulbar and bulbospinal forms of poliomyelitis."

Several studies on the relationship between the absence of tonsils and adenoids and the onset of bulbar poliomyelitis were reviewed in the editorial. One study described 1,947 patients, 51.9 per cent of whom had neither tonsils nor adenoids at the time the disease was contracted.

Of the patients afflicted with bulbar polio, 85.1 per cent previously had been subjected to the tonsillectomy procedure, while 68.7 per cent of the patients attacked by bulbospinal polio previously had undergone tonsillectomy. Of the patients with bulbar polio who previously had been subjected to tonsillectomy, 93.5 per cent died, as did 56.9 per cent of such patients with bulbospinal poliomyelitis.

Another study described in the editorial concerned 800 patients with polio, 500 of whom had been subjected to tonsillectomy and adenoidectomy. Of the 85 patients in whom bulbar polio developed, 85.9 per cent previously had been subjected to tonsillectomy. Bulbospinal poliomyelitis occurred five times more frequently in patients whose tonsils had been removed.

The incidence of both nonparalytic disease and spinal paralytic disease in this group of patients was higher in those without tonsils than in those with tonsils. In general, comparison of patients with tonsils and patients without showed that bulbar polio was three to four times commoner in patients subjected to tonsillectomy than in those not operated on, and that bulbospinal polio was three to five times more common in patients subjected to tonsillectomy than in those in whom such surgery had not been performed.

A third study reviewed pointed out that of 432 patients with acute anterior polio, 61 per cent of the patients afflict-

ed with bulbospinal polio had had their tonsils removed, as had 76 per cent of those afflicted with bulbar polio. Seventy-eight per cent of the patients who died had neither tonsils nor adenoids when they became ill.

#### CORRECTION OF IMPROPER DIET MAY CURE DELUSIONS

Correction of a deficient diet may cure the delusion of being parasitized by insects, it was reported in the *Journal of the American Medical Association*.

Four cases in which patients described bizarre habits of fictional parasites upon their bodies were discussed by Dr. Irma Aleshire, Iowa City, Iowa. All the patients suffered from pellagra, a deficiency disease, and all were cured of their delusions after institution of a proper, antipellagrous diet.

According to Dr. Aleshire, the patients believed the imaginary insects to cause burning, crawling, itching sensations to their skin. In attempts to alleviate the sensations, the patients scratched themselves until their skin bled, or dug small holes in their skin with fingernails. They also washed their clothing and bedclothing daily, bathed themselves frequently, and applied various anti-insecticidal preparations to their bodies.

"It is significant that a history of poor eating habits was elicited on questioning the only patients with delusions of parasitosis whom I have seen in the past 11 years, and that correction of their eating cured their affliction," Dr. Aleshire stated.

"The fact that crawling sensations and burning pain as from the bite of an insect were present may have led the patients to the wrong assumption that such symptoms were due to the presence of insects. Fantastic irrationalization as to the nature and habits of the supposed parasites may be connected with the fact that the central nervous system is particularly vulnerable to malnutritive changes, as manifested in pellagra."



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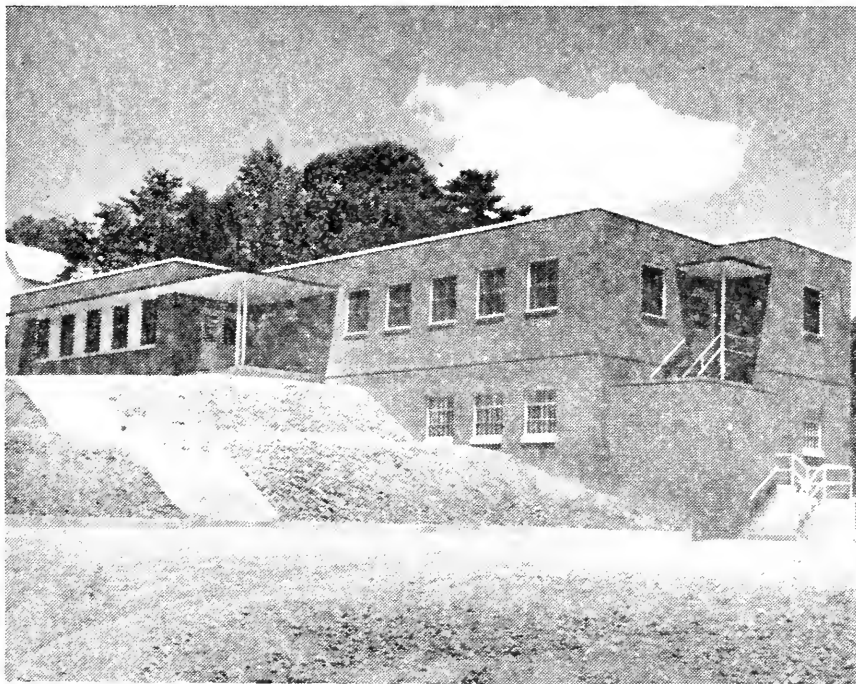
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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
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### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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# THE Health Bulletin



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## DEDICATION OF THE COOPER BUILDING

At 10 a.m., Saturday, September 25, the new building constructed for the State Board of Health will be dedicated as the George Marion Cooper Memorial Building in conformity with the special act of the North Carolina General Assembly of 1951. Memorial and dedicatory services will be held at the Edenton Street Methodist Church. Governor William B. Umstead and Dr. Amos Johnson of Garland, North Carolina, will deliver addresses. All friends of Dr. Cooper are cordially invited to attend.

Immediately after these services, there will be unveiled in the entrance of the Cooper Building a bronze bas-relief of Dr. Cooper and a bronze tablet, giving a brief summary of his life and services to Public Health.

This building is located on the North-east corner of Caswell Square at the

corner of North McDowell and Lane Streets—one block west and one block north of the State Capitol Square—one-half block east and one block and one-half north of the Edenton Street Methodist Church. These directions are given in the hope that they may assist visitors to Raleigh in finding favorable and convenient parking places. The Central Staff of the State Board of Health is now moving into the new building. It is expected that the building will be completely occupied by September 25. After the unveiling of the bronze bas-relief and tablet, the Cooper Building will be opened for inspection. It is planned to have someone in each part of the building to explain the activities that are carried on in that particular location.

## THE ROLE OF THE HEALTH DEPARTMENT IN THE SCHOOL HEALTH PROGRAM

By B. M. DRAKE, M.D., M.P.H.,  
Assistant Director, Local Health Division, and  
Co-Director, School Health Coordinating Service

Why does the health department take an interest in school health? This question is most simply answered by another, "Is not the school a part of the community?" It is indeed, and one of the most important parts of the community. The health department is responsible for the health of the community; therefore, school health is an

integral part of a well balanced public health program in all of our counties. The school children spend about thirty hours per week in school for nine months each year. Some people have felt that, because of this, the health problems of school children should be isolated from the over-all community. They have considered only a small por-

tion of the life of the school child, since only 17 per cent of his time is spent in school for nine months of the year. They tend to ignore the fact that the health of the child in school is dependent on the health of the pre-school child and the effectiveness of the general health program of the community. Such situations as these have probably come about in some instances because of the inability of the health department to do a completely adequate job.

It has long been the belief of public health administrators that, if the health department could do a complete job of infant and pre-school hygiene, the school health problems would be largely solved. Good pre-natal care makes for healthier infants. Good infant care with regular examinations, correction of apparent defects **during infancy** and immunization against smallpox, diphtheria, whooping cough and tetanus before the age of six months will make for healthier pre-school children. Similarly, a good pre-school program with preventive dental care, good mental hygiene and correction of defects which appear during this period will lessen the school health problems to a large extent. In most places, however, this type of program has not been carried out, and consequently there is a major school health problem and many children have defects which can and should be remedied.

In North Carolina the Department of Public Instruction and the State Board of Health have recognized a joint responsibility and have acted together to solve the problems of school health as a part of the over-all community health. Several years ago the School Health Coordinating Service was formed as a joint venture of the two agencies. This service is headed by co-directors, one from each department. Later, the appropriation of funds by the legislature for the correction of chronic remediable defects in school children filled a need which had been recognized by both schools and health departments. These funds

have been administered by the School Health Coordinating Service and are allocated to counties only upon receipt of an annual plan and budget signed jointly by the health officer and superintendent of schools. While it is preferred that this money not be used to employ personnel, exceptions have been made and such persons as health educators and nurses have been employed in some areas. In general, however, it is felt that it is better to use funds for personnel from the regular health department budget if at all possible.

The School Health Coordinating Service and the State Board of Health are able to furnish consultative assistance to the counties if and when needed. The School Health Coordinating Service employs persons who aid and advise those in local health departments and schools. There are trained public health nurses, health educators, physical educators and a psychologist. They help set up and conduct workshops for in-service training, working directly with teachers. They also aid in over-all planning with health officers and school superintendents.

The State Board of Health furnishes certain additional personnel, who upon request, go into the counties to aid in the school health program. The Public Health Nursing and Health Education Sections render professional guidance to the local health department personnel. In addition there is available specialized "know how" from the other divisions and sections of the State Board of Health. The Nutrition Section, in particular, has several area nutritionists, who, upon request, will work with the health department in setting up refresher courses for teachers and aid them in their teaching of nutrition. For years the Oral Hygiene Division has been executing a constructive dental health program in cooperation with schools.

The above discussion has been of persons and services available from the state. In North Carolina the actual job is done in the county or city. The local public health personnel are "on

the firing line" of the public health program of which school health is an important part. The state personnel exist only to help them do a better job. Similarly, the principal and the classroom teacher are "on the firing line" of the education program, in which is included school health.

In the county and city health department there are people with training in the varied fields of public health. Physicians, nurses, sanitarians, health educators and clerks all make up the team that is available to help solve the school health problems.

The health officer is the physician on the team. He directs the work of the health department and plans jointly with the school superintendent and principal as to the over-all goals of the program. He also may do the actual examination of the children and help teach them and their parents, especially in relation to the need for physical examinations, the significance of certain facts discovered during the examination and the reason for the need of correction of defects which may be found.

The public health nurse consults regularly and frequently with the classroom teacher as to the health needs of the children. She takes up each problem individually, referring the child, if need be, to the health officer, family physician or other persons as the case may demand. She conducts frequent nurse-teacher-parent conferences concerning problem children. In this relation she does follow-up visits to the home and, not infrequently, makes arrangements for further medical examination and/or treatment of the child.

The sanitarian is concerned with the environment. As a part of the county cafe inspection program, he makes

regular visits to the school lunchroom, posting grades as in other food-handling establishments and working with school lunchroom supervisors for an over-all improvement of facilities.

Inspection of other aspects of the school is based on a cooperative effort of the State Board of Health and the State Department of Public Instruction. This involves the general cleanliness of the school, the adequacy and cleanliness of toilet facilities, the adequacy and safety of the water supply and other phases. The ultimate aim of this program is to impress the school children with the vital importance of cleanliness of the environment. The sanitarian also consults with the principal as to the prevention of faulty conditions and as to what means may be used to improve these conditions. (For example, in case of poor lighting, a rearrangement of the seats in the classroom may help the situation).

The health educator supplements the work of the other personnel. He or she also works with the teacher in preparing the children for the various activities of the team. He aids the nurse in setting up workshops for in-service training in screening methods. He works with parent groups and utilizes the techniques of group dynamics in the school health program.

The clerk of the health department is the hub around which all of these activities revolve. She keeps the records, acts as a "stimulator" and is ready reference for any and all questions that may arise.

The routine execution of the duties assigned by all the members of the health departments and school officials should and will achieve a marked improvement in the physical, intellectual and emotional status of the future citizens of North Carolina.

## PROGRESS IN SCHOOL HEALTH IN NORTH CAROLINA

By CHARLES E. SPENCER

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For many years school people have accepted, theoretically at least, the

importance of health in the total education program. In 1938 the Education

Policies Commission in the publication **PURPOSES OF EDUCATION IN AMERICAN DEMOCRACY** pointed out this importance in the following statements:

"The educated person understands the basic facts concerning health and disease."

"The educated person protects his own health and that of his dependents."

"The educated person works to improve the health of the community."

Every experience and every situation, from the time the child arrives at school until he leaves in the afternoon, may have some good or some bad effects, eventually, on his health. Therefore, it is clear that a comprehensive school health program must take into consideration every phase of school life, and, conversely, each phase of school life must be considered in the light of the effect it has on the health of children.

The schools of North Carolina have not fully achieved the high purposes of education in regard to the school health program, but marked progress has been made in the many inter-related phases of education that together we call school health.

The most concrete evidence of this progress can be seen in the improvement of the physical environment of the child while he is at school. Since 1949 school people, tax-levying authorities and all those who voted for school bonds have acknowledged the importance of adequate and healthful school facilities. In most cases schools have gone beyond just providing housing space and minimum sanitary facilities. They have recognized the importance of facilities in the learning process. Most school children can now learn about the importance of good lights, sanitary toilets, handwashing facilities, etc. through the use of good facilities.

From 1949 to July 30, 1953, North Carolina spent \$111,000,000 bond money voted locally and \$48,000,000 State funds for school construction and facilities. According to figures compiled by the Division of School Planning of the

State Department of Public Instruction, these funds were spent for the following:

Classrooms .....	12,505
Auditoriums .....	258
Gymnasiums .....	239
Lunchrooms .....	606
Auditorium-Gymnasiums .....	106
Gymnasium-Lunchroom .....	10
Shops .....	162
Libraries .....	431
Home Economics .....	248
Science .....	219
Others .....	1,285

As a result of the tremendous backlog of needs prior to 1949 and the exceptionally high increase in enrollment in the public schools, there are still many needs for classrooms as well as other improvements.

The North Carolina General Assemblies of 1949, 1951 and 1953, recognizing the need for prevention, detection and correction of chronic remediable defects that cause absences from school and decrease ability to learn, appropriated \$550,000 annually to the State Board of Education for allocation, for health purposes, to city and county administrative units. These funds have been administered by the School Health Coordinating Service of the State Board of Health and the State Department of Public Instruction in accordance with the "Joint School Health Plan" adopted by the State Superintendent of Public Instruction and the State Health Officer and approved by the State Board of Health and the State Board of Education. This "Joint School Health Plan" was unanimously approved by the members of the Medical Society School Health Advisory Committee.

On the local level the superintendent of schools and the health officer plan and spend school health funds to meet their greatest needs in accordance with the policies adopted by the two departments. In this planning the local health officer and superintendent usually get valuable assistance from the welfare department, the local medical and dental societies and others concerned.

School health funds together with funds allocated to local health de-

partments by the State Board of Health have enabled schools and health departments to extend and improve the services to school age children in the following ways:

1. Through educational procedures to prevent many defects and illnesses of school children.
2. Through health appraisal procedures by teachers, nurses, physicians and dentists to detect defects of school children.
3. Through follow-up procedures by principals, teachers, nurses and health officers to get parents, who were financially able, to get needed medical service for the children.
4. Through cooperation with other agencies and organizations to secure local funds for needed medical and dental services for underprivileged children.
5. Through the cooperation of physicians, dentists and hospitals to correct, with school health funds, chronic remediable defects for indigent and medically indigent children when other funds were not available.

Figures as shown below, compiled from reports from city and county school administrative units and local health departments, indicate the scope of health services provided school children with State Board of Education school health funds for the school years 1952-53 and 1953-54.

Defects Corrected	1952-53	1953-54
Tonsils .....	4,217	4,097
Teeth .....	16,713	15,817
Ears .....	213	962
Hernia .....	78	106
Orthopaedic .....	43	35
Intestinal Parasites .....	1,051	910
Glasses .....	2,343	2,197
Eye Surgery .....	27	17
All others .....	61	1,748
Diagnostic Services	1952-53	1953-54
Eye Examinations .....	1,163	1,668
Medical Examinations .....	15,044	20,066
Chest X-rays .....	13	920
Hearing tests .....	(no report)	69,367

It is not possible to show with figures the progress that has been made in the development of a functional health

instruction program in the public schools. However, evidence of this progress has been seen by visits to classrooms and conferences with superintendents, supervisors, principals and teachers.

For many years the teaching of health has been required thirty minutes, or the equivalent, per day in grades one through eight. In 1942 health instruction was made a requirement (two periods of 45-60 minutes each) in the ninth grade. The best available health textbooks are provided free by the State for grades 4-8. Supplementary health textbooks have been adopted for grades 1-3 and State-adopted health books are available on a rental basis in the ninth grade.

These textbooks are provided by the State as important sources of reference material but not as a day-by-day guide for academic teaching. Good teaching of health in North Carolina consists of teaching those things that are related to the needs and interests of the individual pupils and of the groups.

Assistance and guidance has been given to school superintendents, supervisors, principals and teachers in improving health instruction by the health education personnel of the School Health Coordinating Service, and by other supervisory personnel of the State Department of Public Instruction working in cooperation with the health personnel.

Local supervisors, some paid out of local funds and some out of State funds, have been of invaluable assistance to teachers in making health education an integral part of the total education program.

An important project to improve the health programs in the State was launched in 1948 when the late Dr. Clyde A. Erwin appointed 120 persons to serve on a committee to carry out a State-wide "Curriculum Building and Improvement Project in Health, Physical Education and Safety." A small "Steering and Editing Committee" composed of the health education personnel of the School Health Coordinating Ser-

vice and of the Division of Instructional Service of the State Department of Public Instruction was also appointed. The purposes of the "Project" were to:

1. Stimulate local groups to carry on curriculum building and improvement projects in health, physical education and safety.
2. To provide opportunities for in-service education for group leaders throughout the State and for a few local groups.
3. To prepare a publication in physical education, health education and safety.

In 1953 the publication **PHYSICAL EDUCATION IN ELEMENTARY AND SECONDARY SCHOOLS** was issued by the State Superintendent of Public Instruction and in 1954 the publication **HEALTH EDUCATION IN THE NORTH CAROLINA PUBLIC SCHOOLS** was issued. The article **Highlights of the Curriculum Guide, HEALTH EDUCATION — NORTH CAROLINA PUBLIC SCHOOLS**, on page 9 of this **Health Bulletin** gives a brief outline of the contents of the latter publication.

The health education publication was distributed too late in the school year 1953-54 to be used by teachers, but participation in the preparation of the health curriculum materials for the publication has helped build health leadership all over the State.

There is abundant evidence in classrooms throughout the State that teachers are teaching health by helping children solve their present problems and by developing their ability to meet successfully their future health problems.

They use, in addition to textbooks and curriculum materials provided by

the State Department of Public Instruction, up-to-date scientific materials published by State and national organizations and agencies and reliable publishing companies. Teachers make use of school and community resources, and when they are needed for special purposes, also the services of competent resource people.

Because of space limitations, it is not possible to make a report on all the phases of education that affect the health of children. Below are listed a few without giving any details:

1. The School Lunch Program, which not only provides lunches but serves as laboratories for teaching good food habits.
2. The Special Education Program, which provides special instruction for those who have physical or mental handicaps.
3. The Vocational Rehabilitation Program, which provides physical restoration and vocational training for a vocation for pupils over 16 years of age and for adults with physical handicaps.
4. The Home Economic and Agriculture Programs, which teach many things related to health and better living.

With the help the new health education publication will give school personnel, with the aid of State and local leadership and with better undergraduate and graduate health education in our colleges and universities, schools will make further progress in achieving health, which is placed as the first aim of education. Without health the other goals of education will be much more difficult, if not impossible, to attain.



## Highlights of the Health Curriculum Guide HEALTH EDUCATION— NORTH CAROLINA PUBLIC SCHOOLS

By CHARLES E. SPENCER and MRS. ANNIE RAY MOORE

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The new publication, *Health Education in the North Carolina Public Schools*, has been issued by the State Superintendent of Public Instruction.

The material in this bulletin was developed through a statewide project directed by the School Health Coordinating Service over a four-year period.

Activities in this project began with the selection of county, city and statewide committees. These original committees had much to do with the kind of material in the bulletin by suggesting the things teachers would like to have included in the publication. The statewide committee through the subcommittees worked out the tentative draft for most of the resource units.

From time to time all school administrative units and all local health departments were invited to make suggestions and contributions of various kinds. The help from these local departments was invaluable to the editing committee in preparing the final draft. Without a doubt this bulletin will be of more use to teachers and other school and health personnel because it contains contributions from so many of those who will use it.

Teachers, principals, supervisors, superintendents, nurses, health officers, health educators and other health and education personnel will find helpful information and suggestions in the publication.

Following are some of the things contained in the bulletin.

**DEVELOPMENT OF THE MATERIAL IN THE PUBLICATION.** This section gives the story of the way the material was developed, including the names of persons who had responsibilities in the project.

**ORGANIZATION AND ADMINI-**

**STRATION OF THE HEALTH EDUCATION PROGRAM.** Discussions and suggestions are included in this section on items such as:

- "Essentials of Administration," which includes a list and brief discussion of items essential to the health program in schools.

- "Guiding Principles," which states philosophy and suggests ways of working democratically to carry on the program.

- "Scope and Interrelationships," which calls attention to the entire program and points out some of the relationships of health services, healthful school living and health instruction.

- "Financing," which describes various funds that help finance the total health education program.

- "Physical Education and Recreation," which have definite relationships and contributions to the health education program and are discussed briefly in this part of the bulletin.

- "Implementing the Program," which suggests methods administrators may use to help carry out the health education program in the schools.

**HEALTH SERVICES.** Among other things, this section contains suggestions to local units for working out definite policies with regard to:

- Joint planning and procedures
- Pre-school conferences and clinics
- Teacher observation and screening
- The nurse's role in health appraisal
- Health examinations including priorities for these examinations
- Follow-through procedure
- Health records
- Care of emergency illnesses and accidents
- Control of communicable diseases
- Evaluations.

**HEALTHFUL SCHOOL LIVING.** In this section are listed some of the most important items in the total school environment—physical facilities, organization of the school day, emotional climate of the school and classroom and the health of the teacher.

Responsibilities of various personnel are pointed out in this section.

**HEALTH INSTRUCTION.** The major part of the bulletin is devoted to health instruction. "Planning the Year's Work" is a section directed to the teacher and includes practical suggestions for program planning.

A series of resource units covering, to some degree, the total health education program, has been included for use by teachers in developing teaching units to meet the health instruction needs of their pupils. Following is a list of these units:

1. Maintaining and Improving Mental Health
2. Developing Wholesome Life Relationships
3. Communicable Disease Control, including Sanitation
4. Community Health
5. Personal Health units on the following areas:
  - Nutrition
  - Dental Health
  - Rest, Sleep, Relaxation and Recreation
  - Care of the Eyes, Ears, Nose and Throat
  - Heart and Circulation
  - Alcohol Education
  - Narcotics Education

- Personal Cleanliness and Grooming
- Posture
- Cancer Education.
- 6. First Aid.
- 7. Safety Education.

The **APPENDIX** contains:

- "The Teacher Screening and Observation Manual." This is a rewrite of the material in the "Manual of Screening and Medical Examination of Elementary School Children." This section of the publication has been reprinted separately from the rest of the publication and is available to health departments in North Carolina without cost.
- "The Joint School Health Plan" is the plan governing the expenditure of the School Health funds as agreed upon by the State Superintendent of Public Instruction, State Health Officer, State Board of Education and State Board of Health.

Also in the Appendix are a list of laws relating to health in the schools.

The bulletin contains an Index which will make it more useful as a reference.

As indicated by the brief description of some of the contents, the bulletin should be useful to all health and education personnel working in any phase of the school health program.

Local schools get this bulletin through their superintendents in the same way as other bulletins issued by the State Superintendent of Public Instruction.

Individuals may secure copies direct from Mr. L. H. Jobe, Director of Publications, State Department of Public Instruction, Education Building, Raleigh, N. C. at the price of \$1.00 per copy.

## TEACHER OBSERVATION AND JUVENILE DELINQUENCY

By MRS. ANNIE RAY MOORE, Health Educator,  
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In the publication "Schools Face the Delinquency Problem"<sup>1</sup> the following

<sup>1</sup>Hill, Miller and Gabbard. *Schools Face the Delinquency Problem*. National Association of Secondary School Principals. Reprinted from the Bulletin, December, 1953, Vol. 37, No. 198, 1201 Sixteenth Street, N. W., Washington 6, D. C.

statement appears: "The initial identification of delinquent youth will often be made by classroom teachers." That is just what the teachers of North Carolina are doing. When any deviations are noted, the teacher goes to

work immediately to get help for this child *before* his case becomes too severe or too costly to correct. In the same publication is another statement, "When the teacher's observations indicate the existence of a critical situation, or when the pupil's aggressive behavior continues over a long period of time, the problem will require the assistance of specialized personnel. . . ."

This is just what is happening in many, many of the classrooms of the public schools in North Carolina. As a part of the regular school program, teachers observe children under their daily supervision for signs of deviation. By these deviating signs the teacher recognizes that the boy or girl is not growing as he should or as children of that age-group usually do. Children with any deviation will be further studied by the teacher and/or referred for medical help or other professional service through the regular screening program and referral program.

And what is the regular screening program in the schools? Briefly stated, in general it is the following plan:

1. Each classroom teacher observes the children in the group she teaches; quickly each day and in more detail at wider intervals. Periodically she gives a few simple screening tests such as the Snellen Eye Test. *The North Carolina Teacher Screening and Observation Record*, State Department of Public Instruction, and the manual in the Appendix of *Health Education*, Publication No. 287, to facilitate its use are two tools at the teacher's disposal in this program.

2. Children who are found to deviate from the expected looks or behavior are referred for medical services or other professional help. The teacher will study these cases to learn as much as possible about the child's total environment and activities.

3. The teacher refers those who, in her judgment, need some medical or other professional help. The first referral is usually to the public health nurse serving that school. The teacher and nurse together then select those children to be referred for further

evaluation or diagnosis.

4. After medical diagnosis the teacher encourages the child and often the parents to follow the recommendations of the physician or other professional personnel. When the treatment so indicates, the teacher helps the child work out a schedule or program of activities in accordance with his defect or condition. Many children receive help from the school health funds appropriated by the Legislature to the State Board of Education for grants-in-aid to the public schools.

5. Teachers keep a simple record of the child's health progress.

It should not be overlooked that the entire school program plays a very important part in helping children grow normally. This is the finest kind of way to aid in the prevention of delinquency.

The question may be asked, "When does a child show signs of delinquency?" We are told that this condition may begin development any time during the school years or even before the child enters school. And what signs or symptomatic behavior does the beginning delinquent show? At present it seems there is some doubt about the adequacy of our knowledge to predict just exactly which children showing deviating behavior will actually become delinquent. This makes it even more important for the teachers to be alert to *all* signs of defects in children.

Very few teachers can relate a dramatic experience, such as getting a child out of jail and rehabilitating him, which is a very worthy contribution indeed. But thousands of teachers have "spotted" and screened out many, many children when they apparently started on that unfortunate road. They have secured help for them in the early stages of their deviating behavior and guided these boys and girls into a sound program of activities whereby they avoided the jail or other such pitfall.

Some research indicates that most physical defects may be ruled out as specific causes of juvenile delinquency. However, through the screening and

follow-up programs teachers have found many children with physical defects which impeded their *normal social and educational progress*. Children with hearing losses, defective eyesight, unsightly teeth, orthopedic defects, etc. have been found by teachers. What is more important, services were secured for these children for the correction of their defects or improvement of their conditions *before it was too late*. The health service program in the schools has helped teachers to look behind any deviating condition to find reasons for that condition.

The whole child is considered by the teacher in guiding his growth and development. Because his total environment is important, the teacher "looks at" the child's home conditions and the community where he lives. The teacher

has the services of the public health nurse who visits the home in helping to know and understand the child's living conditions. Other community workers may aid the teacher in finding information to pass on to those who are to make the clinical diagnosis.

To sum up briefly, thousands of teachers screen many more thousands of school children each year, refer them for diagnosis and treatment, which they get more often than not, and help these children work out a successful readjustment to their school work and community living. We do believe that through the above plan which is just one phase of the total school program, teachers do help prevent many of these, our children, from becoming juvenile delinquents.

## **SURVEY OF HEALTH AND PHYSICAL EDUCATION IN NORTH CAROLINA HIGH SCHOOLS**

By TAYLOR DODSON, Adviser in Physical Education,  
School Health Coordinating Service of the  
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A survey of the status of school health and physical education in North Carolina has just been completed. This was done as part of a national survey covering the period 1950-1954. The North Carolina sample consisted of 135 high schools selected by a proportional, stratified, random sampling technique.

All the schools in the state were stratified by school size and township or town size and placed into appropriate classes for the drawing of a random sample using a table of random numbers. The 135 selected schools were scored by a person trained in the use of the score card which was used as the evaluative instrument. This scoring was done after interviews were held with both the principal and the health and physical education teacher of the school concerned.

The score card used was developed by a national committee on curriculum research of the College Physical Education Association, and it is based upon

fourteen years of research. The card is divided into ten areas and ten items under each of the areas. Each item may score from 0-3 points, making a possible total of 30 for each area and a total of 300 points for the total score. The areas of the score card are:

- I. Program of Activities
- II. Outdoor Areas
- III. Indoor Areas
- IV. Locker and Shower Areas
- V. Swimming Pool
- VI. Supplies and Equipment
- VII. Medical Examinations and Health Service
- VIII. Modified-Individual (corrective) Activities
- IX. Organization and Administration of Class Programs
- X. Administration of Intramural and Interschol Athletics

Total scores made by North Carolina schools ranged from 32-201, with a mean of 91.38. The median score was 76 points. Analysis of the relationship

between total score and various factors, such as geographical area of the state, school size, town size, and accreditation by the Southern Association of Colleges and Secondary Schools, revealed that total score did not vary significantly from one section of the state to another. The other factors of accreditation, school size and town size were all significantly related in the order mentioned to both area score and total score.

The total score median of 76 made by North Carolina schools corresponded exactly with the national median based on preliminary returns from seventeen states. This score represents less than thirty per cent of the total score possible.

Mean area scores by rank order were found to be Area IX, 13.57; Area VII, 13.04; Area II, 11.97; Area X, 10.95; Area III, 10.08; Area I, 9.59; Area VI, 8.67; Area IV, 8.41; Area VIII, 2.50, and Area V, .97. It may be readily seen that Area V, Swimming Pool, is non-existent in North Carolina. Area VIII, Corrective Activities, was not much better. These two areas of the score card have the same rank nationally, however.

The first-place position of Area IX, Administration of the Class Program, is found also in the national average of 13.62 as compared to North Carolina's 13.57. Area X, Intramural and Interscholar Athletics, ranked second nationally, with a mean of 13.14 and fourth in North Carolina, with a mean of 10.95.

It is to Area VII, Medical Examination and Health Service, that this State can point with a little pride. Ranking second in North Carolina, with a mean of 13.04, it ranks fourth nationally, with a mean of 10.98. This favorable position can, no doubt, be attributed substantially to the expenditure of \$550,000.00 annually for school health services.

The teacher screening and observation record which is used in the classroom during the year and filed with permanent records in the child's cumulative record folder each spring is one item that contributed to the score on

Area VII of the score card. Volunteer and part-time paid service by community physicians in providing a comprehensive medical examination of students for a careful checking for orthopedic and postural defects, vision, hearing, nose, mouth, throat, teeth, heart, lungs, nutrition, skin, nervous condition and possible hernia was also an item frequently found. In many cases these services were being provided by county health departments. Health examinations of all teachers represented another item under Area VII, on which North Carolina scored well consistently.

Two areas of the score card on which North Carolina scored lower than the national average were Area IV and Area VI.<sup>1</sup> Area IV, Lockers and Showers, may be related closely to health. Sanitary environment and desirable attitudes and health practices may go hand in hand. Many believe that proper dress for activity and a soap bath in warm water in clean, attractive surroundings are as important as the physical exercise. Area VI, Supplies and Equipment, may not be so closely related to the health of students as it is to their safety and physical well being through adequate participation in satisfying physical activity. Safe supplies and equipment in adequate amounts constitute an essential requisite for a broad, varied program of physical education. The fact that supplies and equipment ranked fourth from the bottom of the ten score card areas is indicative of the need for increased attention to this vital phase of the program.

The position of health services in relation to other areas of the score card is no reason for complacency, nor is there reason for North Carolina to be satisfied with less than one-third efficiency as far as total score is concerned. Remember that second-ranking Area VII, Health Services, scored an average

<sup>1</sup>National statistics taken from Bookwalter, Karl W., *Preliminary Report, National Survey of Health and Physical Education in High Schools*, Bureau of Service and Research, School of Health, Physical Education and Recreation, Indiana University, Bloomington, 1954.

of 13.04 points out of a possible 30 points. This is less than half of what could have been done. North Carolina

still has room to improve a school health program that is recognized nationally as outstanding.

## PHYSICAL EDUCATION CONTRIBUTES TO BETTER BOY-GIRL RELATIONSHIPS\*

By TAYLOR DODSON, Adviser in Physical Education,  
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A sudden increase in height and weight together with an increase in the size of arms, legs, hands, feet and the rest of the anatomy is typical of adolescence. This manifestation is accompanied by an increased breast development and hip width for girls. Boys exhibit broader shoulders, heavier voices and evidence of facial hair.

This increase in growth is likely to cause easy fatigue and need of much sleep and rest. The explanation of this phenomenon lies in the fact that the heart, lungs and other internal organs are likely to lag behind in this sudden spurt of growing up which the rest of the body structure is experiencing. Even so, the rapid growth of large muscles, the gain in strength and the awakening of sex-consciousness make out-of-doors activity highly desirable since the individual is less likely to be disturbed by sex tensions and other emotional difficulties if he leads a vigorous life.

The rapid increase in size of body extremities may result in awkwardness which causes a feeling of social ineptness. This diffident sensitiveness is most evident in the presence of adults and is best sublimated by happy companionship with other young people. Boys and girls need satisfactory means of expression. This outlet may be tennis, swimming, mowing the lawn, a strenuous game or even a purely emotional outlet such as music or drama. It is more important to find enjoyment and satisfactory expression than it is to be a good performer.

All of us are familiar with the trend toward more free time for all people which has accompanied shorter working hours and half shifts. This decrease in manhours of labor per week has been due to increased efficiency and mechanization of industry for the most part, but for adolescents it is due in part to protective legislation.

The human body has not adjusted to maximum efficiency during adolescence. Boys and girls in their teens are still growing very rapidly and are using up much of their reserve energy. They are constitutionally unsuited to sustained, concentrated effort. The undesirability of labor for rapidly growing youth has led to legal minimum ages for working, so that adolescents have even more leisure than adults.

When the struggle for existence occupied man's every waking hour, play was looked upon as unimportant, unnecessary or a waste of time. It is now apparent that we need to educate for the wise use of leisure. Resources for its proper use are not automatically attained. The public schools must meet the need of students for learning recreational skills.

There is danger in building our lives around one strong point. We need to develop a variety of skills and interests. Even if not up to professional status, one can always enjoy amateur participation. It is important, however, that our level of ability be above the dub class, for, in order to achieve satisfaction from participation, there has to be some feeling of success. We enjoy most these things we do well. We dislike or fear those things we know little

\*Adapted from: "Sports and Games Meet Recreation Needs of Adolescents," by Taylor Dodson. *The High School Journal*, April 1952.

or nothing about.

It is, therefore, important to learn physical skills, to develop physical fitness, strength and endurance for at least moderately sustained activity. Morale, sportsmanship and sacrifice for the good of the group are not learned in the bleachers; they are learned on the playing field. Public-spirited citizens who object to the commercialization of leisure and the growth of spectator recreation would do well to promote a broad, varied program of physical education as well as adequate and wholesome public recreation facilities.

How then do these physical and emotional factors relate to physical education? It is a basic fact that boys and girls are different and this difference begins to be more apparent as adolescence is reached. It is this difference, no doubt, that explains the powerful attraction we feel toward the opposite sex. Understanding of this attraction and a wholesome point of view will influence our lives for happier living. This attraction leads to friendship, to love and to marriage. Participation in appropriate corecreational physical education activities from the very onset of adolescence will help in developing proper attitudes and social skills which enable boys and girls to converse freely with many people, to make many friends and to experience social success in a variety of situations. These experiences should, later, help the young man or young woman to evaluate more objectively the merits of prospective marriage partners.

The normal adolescent wants to spend more and more time doing things with boys and girls of his own age and less with his family. This is no reason for parents to be concerned, for it is a sign of growing up and of making a good adjustment to life. Teen-agers are part of a family, but they must have their own individuality, and this individuality is easier to assert when they are with a group of their own age. The pal or buddy is important, for adolescents feel that adults do not understand them.

Youths of today do not enjoy the

pursuits of yesteryear. The taffy pull, home singing, sleigh rides, box suppers and pop corn balls have given way to bowling, swimming, dancing, biking, hiking, hunting, fishing and archery. Boys and girls play together as pals more freely than ever before. This is important, for men and women work and play side by side as adults, and it is well for the adolescent to establish a wholesome attitude toward social institutions.

Adolescents need to belong, to be associated with a common cause. They need to achieve, to feel that their efforts are worth while. Physical education offers an ideal medium for meeting these needs. Since adolescence is a time of development, there is need for vigorous, rhythmic movement as a stimulus to development. Adolescents need to be doing things. Boys like to exhibit strength. Girls like to exhibit poise and grace. Both like recognition. Excelling in sports is a socially desirable way of achieving it.

Sports and games offer the adolescent adventure. We flirt with danger in games when we pit ourselves against an opponent, whether pitcher, tackler, five-pound bass or honking goose. Lacking these opportunities for outlet of aggressive drives, the adolescent may exhibit hate, destruction or fight. Lack of opportunity for wholesome recreation may result in teasing the policeman or molesting the property of merchants or neighbors. Sports and games develop camaraderie, friendship and love, as against the emotions of hate, fear, greed and selfishness.

After the age of twelve or thirteen the individual likes to be part of the group, to unite for a common cause. Team games offer the adolescent this opportunity. There is also a desire for individual recognition, power, self-importance and self-mastery which is met largely through individual games. There is a range of activities of competitive and non-competitive types so that the youngster can find satisfactory expression in some sports of his choice.

Sports and games follow a pattern of democratic action, character building

and leadership training when there is wise leadership to provide adequate training in fundamentals. Swimming in the creek or tramping in the woods may often have more desirable results than highly organized sports with over-emphasis and publicity. Well directed physical education activities provide wholesome excitement and opportunity to win deserved applause. There is the comradeship of teammates which is so important to adolescents, as is the prestige of belonging to a group. Other recreational and educational benefits

from sports are coordination, quick thinking, cooperation and the ability to take success or defeat. Today, more than ever, when there are no farm chores to develop strength, games must be relied upon. Properly organized and controlled, physical education can be a potent force in an adolescent's development, and it can contribute materially to better boy-girl relationships if ample opportunities are provided for participation in appropriate co-educational classes.

## PARENTS, SCHOOL AUTHORITIES SHOULD TEACH BICYCLING SAFETY

It is the duty of parents and school authorities to teach children to avoid the hazards of bicycling, it was stated in an editorial in the *Journal of the American Medical Association*.

Annually in the United States, bicycle accidents take about 600 lives, according to the editorial. Two-thirds of the fatal injuries occur from May to October, when the weather is most favorable for outdoor recreational activities. Nine out of 10 deaths occur among males, with boys 5 to 19 years of age constituting 70 per cent of all the victims in both sexes.

"Interestingly enough, the concentration of deaths from bicycle accidents among females aged 10 to 14 years was found to be greater than among males," the editorial said. "This indicates that young girls, like young boys, are frequently too venturesome. There was, however, an appreciable number of deaths even among older cyclists.

"A number of factors contribute to the prevalence of bicycle accidents. Collision with a motor vehicle is by far the greatest hazard in bicycling, being responsible for at least four-fifths of fatalities. Other hazardous

practices of bicyclists include 'cutting in' in front of a motor vehicle; carrying an extra passenger on a bicycle; crossing from one lane to another without signaling; failure to exercise caution at street intersections, curves, or when coming out of a driveway or alley; riding on the wrong side of the street or too far from the curb; riding around or between automobiles; and riding bicycles in poor mechanical condition. Accidents other than those arising from collisions with motor vehicles were due mainly to falls from bicycles. About two per cent of fatalities were among pedestrians run into by cyclists.

"These facts make it clearly evident that most bicycle accidents can be prevented. Inasmuch as young children and teen-agers constitute the focal point of the problem, parents and school authorities have a twofold obligation—to make children aware of the hazards accompanying bicycling and to teach them safe habits of riding.

"It is also important that drivers of automobiles and trucks be constantly made aware of the need for looking out for bicycles on streets and high-ways frequented by bicyclists."



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The

# Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

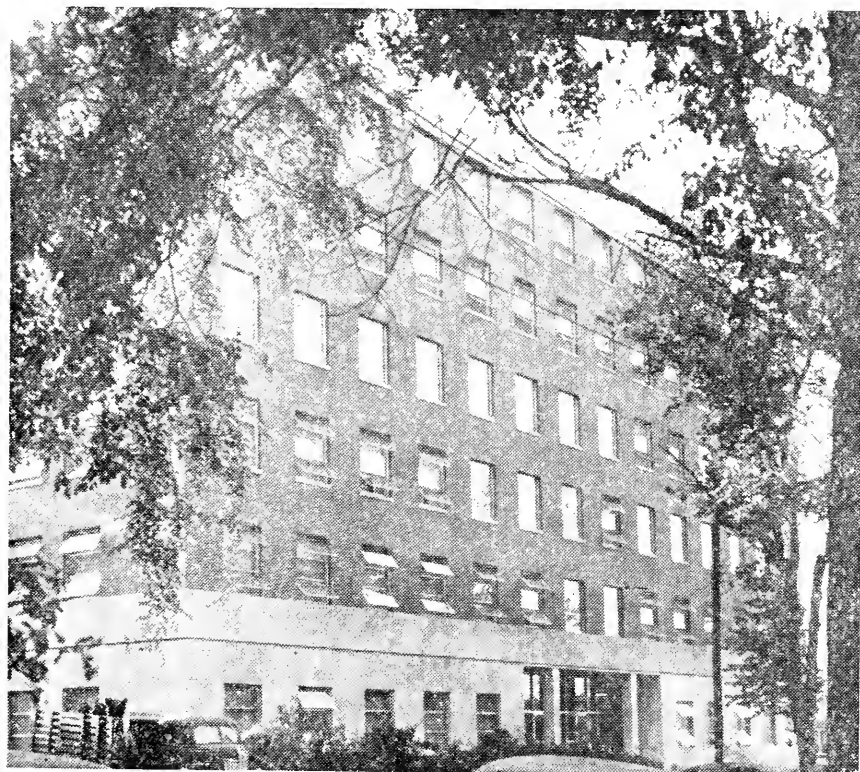
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Vol. 69

OCTOBER, 1954

No. 10



THE GEORGE MARION COOPER MEMORIAL BUILDING

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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
Malaria	Venereal Diseases	

### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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# THE Health Bulletin

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## DEDICATION OF THE COOPER MEMORIAL HEALTH BUILDING

Raleigh, N. C., September 25, 1954

Dr. Grady Dixon, President, North Carolina State Board of Health, Presiding

**Dr. Dixon:** Friends, we are here this morning to dedicate the new public health building, the George M. Cooper Building, doing Dr. Cooper honor. We will begin our exercises with one of his favorite hymns, "Ten Thousand Times Ten Thousand." You will find it, number 531, in the hymn book. Immediately after the song, if you will remain standing, we will have the invocation.

Song, "Ten Thousand Times Ten Thousand."

**Dr. Howard P. Powell:** May we remain standing, please, as we pray. Almighty God, our Father, from whom we come and unto whom our spirits return, Thou hast enriched our lives through one whose mind, heart, talents and gifts were dedicated to Thee, and thus to unselfish service to mankind. As we come now to memorialize the life he lived and to dedicate a building to be used to more adequately promote the vision which he carried upon his heart, we humbly and gratefully acknowledge Thee, the Father of our Lord Jesus

Christ, the Great Physician. Grant unto us, O Lord, in the acceptance of this memorial and through the use of its facilities an awareness of both a responsibility and a sacred privilege as we acknowledge our sense of indebtedness to one who so unselfishly exhibited the spirit of Christ through the ministry of healing. Keep us ever mindful that "The healing of His seamless dress is by our beds of pain. We touch Him in the throng and press and we are whole again." In the name of the Father and of the Son and of the Holy Spirit, Amen.

**Dr. Dixon:** Will the members of Dr Cooper's family that are present please stand and be recognized? Thank you.

The members of the State Board of Health that are present, will you stand and be recognized? Thank you.

The physicians of North Carolina that are present, will you stand and be recognized? Is there a doctor in the house? Thank you.

Ladies and gentlemen, his Excellency the Governor of North Carolina.

## GOVERNOR'S ADDRESS

**Governor William B. Umstead:** Dr. Dixon, Ladies and Gentlemen, it is a pleasure and an honor for me as Governor of North Carolina to be permitted to have a part in this program this morning to do honor to a man who gave his life, literally, that others might live and live more abundantly, live longer and be more healthy. It has been said that no man comes to true greatness who has not felt in some degree that his life belongs to his race, and that what God has given him, He has given him for all mankind. Dr. George M. Cooper's life, I think, was a fine illustration of just what those lines mean. He worked day and night, sometimes without many tools, often with but little encouragement, to help the people who couldn't help themselves. He gave completely what God had given him to his race. This morning North Carolina can be proud that it has produced men like Dr. Cooper to develop one of the finest public health systems to be found in the country, to develop preventive medicine and the practice of those things which are conducive to the prevention of disease among our people. This is neither the time nor the place, and I am not the person, to dwell long upon the efficiency and the accomplishments of the public health program in North Carolina over the years, but, having been permitted once to serve for a few years as a member of a local health board, I think I know what it has meant to the people of this State. Here, then, this morning we accomplish two things: We pay honor to a person who gave his life to his people and to his State, and we open a great building equipped far beyond the dream, I suppose, of Dr. Cooper when he began public health work in North Carolina. This new building, I am sure, will not only be a symbol of the confidence of

the people of North Carolina in the public health system of the State, but I think it will be more than that. It will be a recognition of what men like Dr. Cooper accomplished, a recognition of what men like Dr. Norton and his associates are now doing, a recognition of the work of the members of the board of public health, and it will stand there through the years as a challenge to all who shall come after us, that they too shall make a contribution to the welfare of the people. I suppose there is nothing truer than the statement that nothing is worth much to an individual without health and without faith. With health and faith, we can go a long way toward making North Carolina a more wholesome, a safer, a more healthy, a happier, and a more prosperous place in which to live. I, therefore, am glad to have the opportunity of paying my tribute, along with you, to Dr. Cooper, of paying my respects to those who now are charged with the responsibility of carrying out a program of public health and preventive medicine in North Carolina, and to express my thanks to the members of that board and all of those health officers and assistants all over the State who make a contribution to the effectiveness of our great program of public health. Thank you.

**Dr. Dixon:** When Dr. Cooper first began his work, he went back to his home county and practiced medicine there until he discovered that his life was not intended so much to practice curative medicine—he knew he could do more in preventive medicine, in the preventive field. Thus he came to Raleigh to the State Board of Health and remained with the Board of Health until the end came. We have another Sampson County man this morning that will give us a few words of eulogy, Dr. Amos N. Johnson of Garland.

## DR. JOHNSON'S ADDRESS

Governor Umstead, Dr. Dixon, Ladies and Gentlemen: It is proper and fitting that we should be here now dedicating a magnificent physical structure to the everlasting memory of a great physician who was himself a dedicated man. Devotion and love for the memory of Dr. George Marion Cooper is the common bond among us gathered here today.

Sampson County has reason to be proud of its native sons who have distinguished themselves as men of medicine, having fostered many more than its proportionate share of leaders in this profession. Yet, among this group, the name of Dr. George Marion Cooper stands above and alone as a guiding light. The lineage which produced this man of unusual characteristics goes back to Pre-Revolutionary American stock. His ancestors fought in America's battle for Independence. His grandfather paid a full measure of devotion to his native Southland when he was killed at the battle of Fort Fisher in the War between the States. Dr. Cooper was born in Sampson County April 24, 1876. After attending public and private schools of Sampson County, he taught in these schools for 4 years. In 1901 he entered the Medical College of Virginia, graduating in 1905 with the degree of Doctor of Medicine. In this same year he began the practice of medicine as a general practitioner at Clinton, in his native Sampson County.

It was during these first 8 years as a general practitioner that Dr. Cooper came in contact with, and became conditioned to, the many factors which destined his future. His keen mind soon recognized the needless and useless impairment of health and loss of life resulting from ignorance of means and measures concerned with preventive medicine and public health, on the part of both the medical profession and the general public. Tuberculosis, typhoid fever, toxemia of pregnancy, puerperal sepsis (better known then as childbed fever), infant diarrheas,

whooping cough and diphtheria—all these, now preventable and/or curable diseases, were then exacting a tremendous toll from the population of this country.

As was ever to be true of this great physician, once a problem was recognized, he could not rest peacefully until it had been analyzed thoroughly and a proper solution attained. So, for the last 4 years of his private practice in Sampson County, he devoted part time as County Physician. It was during this period that he started his list of firsts in matters of public health and preventive medicine. Using the citizens of Clinton as a trial group, he was the first doctor in North Carolina to use typhoid vaccine as an experiment in the prevention and control of typhoid fever. The complete success of this project was a tremendous factor in the future course of preventive medicine in this state. The Board of Commissioners of Sampson County, being impressed with the work done by Dr. Cooper, established in 1911 the Sampson County Board of Health, and Dr. Cooper was elected County Superintendent of Health on a part-time basis. These next 2 years spent part-time in public health served to determine the future course of Dr. Cooper's life. Recognizing the vastness of the field of public health and preventive medicine and its importance to the future of humanity, Dr. Cooper then made the decision of his lifetime. It was then that he dedicated his life to the service of his fellow man by deciding to withdraw from private practice and devote his time, in full, to public health and preventive medicine. Little did he know, at that time, that by his efforts and, with the aid of others with a similarity of purpose, the incidence of preventable disease and suffering—of morbidity and mortality—would be reduced from the then appalling high percentages to the now almost unbelievable low percentages which prevail today. So in 1913 Dr. Cooper became full-time Superinten-

dent of Health in Sampson County. The success of his work there led directly to his being called to Raleigh to join the staff of the North Carolina Board of Health on May 1, 1915. The remaining 35 years of his life were spent in this service.

The accomplishments in the field of public health and preventive medicine in the State of North Carolina during the last 35 years of the life of Dr. Cooper are too many to enumerate here today. They are documented many times in many places in this state—this nation—and this world. Let us, however, recall a few of the major projects in this field in which Dr. Cooper pioneered. Typhoid immunization, rural sanitation, school health and oral hygiene clinics, infant and maternal mortality studies, school tonsil and adenoid clinics, crippled children program, and birth control program. Over the years, while establishing his beliefs in these matters of public health, the road was not always smooth. Not infrequently, when some new and somewhat revolutionary proposition was advanced, there arose considerable opposition. But, once convinced the course was right, Dr. Cooper relentlessly stuck to this course. Yet, when convinced he was wrong, and always he had an open mind, he would readily and openly admit the mistake. Dr. Cooper was not a predictable man. He was not a plodder. He was not methodical in his work. For these are products of a dull and unimaginative mind. His was a keen and imaginative mind possessed of a remarkable memory, quick to see imperfections, fast to analyze problems, sure in the problems' termination.

In thinking of the unusual traits of character and the dominant personal characteristics which guided the life of Dr. Cooper, it can be said that in him truly abided the triad of Hope, Faith, and Charity.

Hope, with him, was a dream of a better tomorrow based upon today's realities. Early in his medical career, while still in private practice in Sampson County, he faced the realities of the day and recognized them for what

they were. There was needless and useless loss of life and permanent impairment of health resulting from conditions and diseases which might, with study and work, be remedied. It was upon this hope that he entered full time into the field of public health.

Faith, with Dr. Cooper, was a means of implementing his hope of a better tomorrow. In his staunch, Presbyterian faith he believed that, with God's help, the minds of men trained in the art and science of medicine could find a means to prevent unnecessary illness and death. Some of us here today and untold thousands of people alive in this world owe their very existence to this hope and faith of Dr. Cooper's.

The charity of Dr. Cooper involved the meaning of the word charity to its fullest degree. In recent years most of us have come to regard charity as pertaining to the act of giving of personal belongings to those less fortunate than ourselves. This is only a minor portion of the definition of charity. Charity, as applied to Dr. Cooper, involved a universal love and feeling of responsibility for his fellowman. He was merciful, kind, and tolerant. He was not severe in the judgement of others and was disposed to think well of all men. It was the application of these traits which enabled Dr. Cooper to handle so gracefully his one physical handicap. All of you know of Dr. Cooper's deafness. This was his cross which was to deprive him of top honors in his chosen work. From 1915 until his death in 1950 Dr. Cooper served as Assistant State Health Officer under Drs. Rankin, Parrott, Laughinghouse, Reynolds and our present Dr. Roy Norton. In almost every instance in the time between the tenures of office of these men, Dr. Cooper was elevated to be Acting State Health Officer, only later, and with his own consent, to return to his former title of Assistant. His deafness he accepted and actually made of it a pleasing virtue. There are those among us who give only of their possessions which they have stored up against tomorrow's needs. This is giving but little. Real giving is when one gives

of one's self. This Dr. Cooper truly did. He gave all of himself and, in so doing, asked no reward, sought no joy, felt no pain, nor was he mindful of any virtue. He gave of himself as naturally and gracefully as do the flowers of the field give of their fragrance.

So again I say, it is fitting that today we dedicate, in the name of Dr. George Marion Cooper, this physical structure which houses the facilities to implement the dreams and accomplishments of the life of this great North Carolinian.

**Dr. Dixon:** Next, the remarks by our present State Health Officer, Dr. J. W. R. Norton.

**Dr. Norton:** Governor Umstead, Dr. Powell, Dr. Dixon, Friends: I feel as you do, all of you, I am sure, that this is a day that since the passing of Dr. Cooper we have been looking forward to. Fortunately, Dr. Cooper lived until the initial appropriation for our new building—which will enable us to do better, more efficient, more effective work—had been made. We express our gratitude to all of those who have taken part in making this opportunity for better work possible. I would like to refer to the Board of Public Buildings and Grounds of the Council of State; to George Cherry, who worked so closely with that Board; to Governor Scott and to the 1949 General Assembly; to Governor Umstead and the 1953 General Assembly; to the members of the Board of Health who have carefully gone into all the details and helped work and plan for the building; to the understanding architect, Mr. Deitrick; to the able contractor, Mr. Rogers; and to Mr. Jarrett, our sanitary engineer, and to Dr. John Hamilton for working with all the members of the staff in developing details and plans so that the building would be most livable and usable.

After the fine comments of our beloved Governor, the more detailed references to the life of Dr. Cooper by Dr. Amos Johnson, it would seem that there is very little left for anyone

to say, and yet, I am sure with all the facets of greatness which Dr. Cooper possessed and gave to mankind, I am certain that each of you could think of some new, some unreferred to, contribution that he made. I think of Dr. Cooper as a man of humility, I think of him as a man of stubbornness: I think of him as a man who was considerate, as a man who was neither selfish nor unselfish, but selfless; I think of him as a man lovable in every way. Dr. Johnson referred to the fact of his deafness, and it is interesting to see how persons react to handicaps, and I think that it is innate in the individual, to a large extent, just how one does react to a handicap of any kind. It is so easy for one to withdraw into a shell and to make excuses and to blame shortages on a handicap. Others respond in a different way; they develop other attributes which more than compensate for that handicap. I am sure that Dr. Cooper's handicap helped him to be more considerate, helped him to think of the possibility not only of treating and attempting to cure the handicap, but to go even further and to think of prevention, which is the best way of dealing with handicaps. He thought of others. His teaching of school children four years as a classroom teacher and being a practical worker in the school, I am sure, made him feel his responsibility toward all the children. He thought of his own handicap and his difficulties in obtaining an education himself, and, working in the school, he thought of the health of school children, and he continued to think of that all his life. He observed that one of the best ways of doing preventive work is through teaching, and he was an effective teacher throughout his life. In private practice, as Dr. Johnson has said, he saw all the difficulties that mankind seemed to be heir to, and he thought of the fact that he need not be heir to those things, that the heritage could be changed, and he went about working toward changing a heritage of handicaps, of threats of disease, into a heritage of clean, sanitary environment,

of prevention wherever possible, of early recognition wherever possible, of prompt and adequate treatment regardless of one's income or regardless of any other individual situations. In his local health work he worked on the sanitary disposal of human wastes, to which little attention had been given and which is so important. He did the earliest civilian mass vaccination against typhoid fever. Coming to the State Board of Health, he served as Director of every Division in the State Board of Health, with two exceptions: the Laboratory and the Division of Sanitary Engineering. He developed the school health work, the tonsil and adenoid clinics, and the dental work in the schools, so ably carried on now by Dr. Branch. As Editor of the Health Bulletin, which he loved (and which Dr. Hamilton has ably succeeded him in editing) he got a message across to people in a way that caused people to look for the information that he was giving, and they knew that it would be of help to them: it might save their baby, it might help them to assist in preventing an illness or injury. It gave them indications of the importance of calling on the family physician early in cases of need. It helped to take away the fear that people then had of hospitals. In his maternal and child health work, his crippled children's work, his working with nurses whom he sent out to help develop local health work in a complete way, he was a pioneer. He was honored by the University of North Carolina with an LL.D. degree. He was honored by the Planned Parenthood Federation of America with the Lasker Award for his work in planned parenthood. He was devoted to his church, to his family, to the medical profession with whom he worked and who had the utmost respect for him, and to the North Carolina Conference for Social Service. We could continue to enumerate so many things that he has done and for which we are all sincerely grateful. In closing I should like to read to you the statement I wrote under the pressure and burden

of sorrow immediately after his passing:

"North Carolina has lost its greatest public health official of all time. He served longer, engaged in more activities and did more to make North Carolina public health conscious and to minister to its public health needs than any man in the history of the State. He pioneered more public health services than any man I know, not only in North Carolina but in the nation. Both personally and professionally, he had few peers, if any, and no superiors. His was constantly an uphill fight against ignorance, misinformation, indifference, and shortsighted, selfish interests. The two greatest groups of his beneficiaries were underprivileged mothers and children in whose behalf he not only worked unceasingly but for whose relief he was instrumental in securing millions of dollars in public funds which he administered where they would do the most good among the greatest number of people. During his service with the State Board of Health, the maternal death rate was reduced to one-fourth (not reduced by one-fourth, but to one-fourth) and the infant death rate to one-half of those rates prevailing in North Carolina when his service began. This progress was due to the work of many devoted physicians and assisting personnel. Dr. Cooper was the patient planner, the dauntless and resourceful leader, the tireless worker. I feel in the passing of Dr. Cooper an overwhelming sense of personal loss. In generations to come, the descendants of those he has helped will rise up and call him blessed. His sympathies were broad, and he worked tirelessly in behalf of those he sought to serve and without hope of personal aggrandizement. He was not only a pillar of strength in the public health structure but ever mindful of his family and personal friends and just as zealous in the work of the Presbyterian Church, of which he was a lifelong member and a ruling elder at the time of his death. He was my personal friend and the personal friend



of all who worked with him in any capacity. Our best expression of faith in, and love for, him will be through closing ranks and marching on toward the goals toward which he strove so long and so well."

**Dr. Dixon:** It is only fitting that we have remarks from the man who succeeded Dr. Cooper as Assistant State Health Officer and as Editor of the *Health Bulletin*, a man who worked with Dr. Cooper for the last nineteen years of Dr. Cooper's life. For further remarks, I now present Dr. J. H. Hamilton.

**Dr. Hamilton:** Governor Umstead, Dr. Dixon, Ladies and Gentlemen: The Cooper Memorial Building is the seventh building which has housed the Administrative Office of the North Carolina State Board of Health. The first building was located at 201 Chestnut Street, Wilmington. This was the office of Dr. Thomas Fanning Wood, who in 1877 became North Carolina's first State Health Officer. Since the appropriation was then \$100.00 a year, it was necessary for Dr. Wood to draw rather heavily on his income as a private practitioner of medicine, in order to keep the spark of life in the infant State Board of Health.

In 1878 Dr. Wood established the North Carolina Medical Journal, thus giving public health and medicine a voice which would reach throughout the State. In an editorial entitled "Commercial Value of a Board of Health," in the June, 1878 issue, Dr. Wood called attention to the fact that an effective health program could accomplish improvement of the economic condition of the people by freeing them from the danger of preventable disease, encourage the investment of out-of-state capital for the development of industry, and induce visitors who would spend money to come to the State. He also stated in substance that in order to accomplish these purposes we must have a good health program and a good health record which can be proved by accurate death and morbidity reports. The General Assembly

of 1885 increased the appropriation of the State Board of Health to \$2,000, thus permitting Dr. Wood to start the *Health Bulletin* in April, 1886.

The office of the State Board of Health remained in Wilmington until Dr. Wood's death in 1892. when Dr. Richard H. Lewis became North Carolina's second Health Officer. Since Dr. Lewis' office was at 217 North Wilmington Street, Raleigh, that became the office of the State Board of Health. Sometime later Dr. Lewis moved his office to the Round Step Bank Building which has been replaced by the Raleigh building more familiarly known as the "Walgreen Corner." In 1904 Dr. Lewis employed the first whole-time public health worker in North Carolina, a secretary. In 1907 he was able to secure an appropriation for the establishment of the State Laboratory of Hygiene. Dr. Lewis also struggled valiantly through the years and would not resign nor relinquish his responsibility until he had succeeded in securing an appropriation which was sufficiently large to employ a whole-time Health Officer.

Dr. W. S. Rankin became North Carolina's first whole-time Health Officer in 1909. His office was then located at 121 Fayetteville Street in the building known as Mechanics Dime Savings Bank. There he remained until 1913. Then the office of the State Board of Health was moved to a building owned by the State, the old red brick building at the corner of Edenton and Salisbury Streets which at one time was called the Supreme Court Building—now known as the Labor Building.

During Dr. Rankin's administration there were many outstanding accomplishments, an encouraging number of which have endured through the years. Just to mention three—the enactment of our County Board of Health Law in 1911, our Vital Statistics Law in 1913, and the recruitment of Dr. George Marion Cooper to the State's Health Program in 1915. Dr. Cooper's years of intelligent, devoted service earned for him the admiration and respect of grateful citizens throughout the State.

In 1928 the State Board of Health moved into a building especially renovated for it at the corner of Jones and Dawson Streets. Since that time the building has been known as the Health Building. It was formerly one of a group of buildings for the School for the Blind.

This building housed the administrations of Dr. Charles O'Hagan Laughinghouse, Dr. James M. Parrott, Dr. Carl V. Reynolds and the first five years of what we hope will be a long administration of Dr. Roy Norton. Each of these Health Officers has specific entries on the credit side of the ledger which we cannot enumerate at this time.

Much has been accomplished since the State Board of Health office was opened at Wilmington 77 years ago. Yellow fever no longer fills our people with terror, commonplace smallpox has been pushed outside our boundary. The ever-present typhoid fever has become so rare that the medical student is not likely to see a patient with the disease during his four years in medical school. Malaria is difficult to find. Much progress has also been made in the control of many other infectious diseases. The public health workers of the future will have some difficulty in holding the gains made by their predecessors. They will also be expected to diagnose the public health problems that may develop and devise programs for their control. There is work to be done!

The COOPER MEMORIAL is the first building to be constructed specifically for the Central Staff of the Board of Health. It is physical evidence of the confidence which the people of the State have in the State Board of

Health. From the point of view of housing, it is a vast improvement over anything we have had in the past. It behooves all of us in the use of the new facilities so to conduct ourselves that we will not bring discredit to the name of George Marion Cooper nor falter in our efforts to give as good accounting of ourselves as previous generations of public health workers have done for their generation.

**Dr. Dixon:** I knew Dr. Cooper for thirty years after I began to practice medicine. To me he stood head and shoulders above the common herd. Today will be a highlight in my lifetime by my having had the privilege to take a part in this exercise. I know of no man in North Carolina to whom an exercise of this type is more befitting than Dr. Cooper. It has been a privilege to me to serve on the program with Dr. Powell, Governor Umstead, Dr. Johnson, Dr. Norton, and Dr. Hamilton. Immediately following the close of this meeting we will reassemble at the entrance of the Cooper Memorial Health Building on McDowell Street for the purpose of unveiling a bronze relief placed in the building as a memorial to Dr. Cooper. I hope that all of you will be able to attend that short exercise. We will now have the benediction by Dr. Powell.

**Dr. Powell:** And now the God of peace that brought again from the dead our Lord Jesus, that great Shepherd of the sheep, through the blood of the everlasting covenant, make you perfect in every good work to do His will, working in you that which is well pleasing in His sight, through Jesus Christ, to whom be glory and majesty, dominion and power, both now and ever, Amen.

## THE GEORGE MARION COOPER MEMORIAL BUILDING

The George Marion Cooper Memorial Health Building is located on North McDowell Street near its intersection with Lane Street. As one enters the building the bronze bas-relief and tablet are likely to be seen first since they are immediately in front of the

entrance. To the right will be found the Central Tabulating Unit—to the left will be the room in which multi-graphing and multilithing work is done. Beyond this room is the Mailing Room. In the rear is storage room for paper stock and printed material.

On the second floor will be found the Public Health Statistics Section. It is here that the millions of birth and death certificates are stored in vaults and processed to reveal vital information. Here also are made the certified copies of birth and death certificates.

On the third floor will be found the office of the Directors of Personal ology, Division together with the offices of the Communicable Disease Section, the Accident Prevention Section, the Veterinary Public Health Section, Venereal Disease Section, Tuberculosis Section and the Occupational Health Section. The Central Files are also located on this floor.

On the fourth floor will be found the office of the Director of Personal Health, Maternal & Child Health Section, Crippled Children Section, Nutrition Section, Cancer Section and Heart Disease Section. Also located on this floor is the Personnel Section.

On the fifth floor are the offices of the Director of the Sanitary Engineering Division and of the Sanitation Section, Engineering Section, Insect and Rodent Control Section, and the Stream Sanitation Committee.

On the sixth floor are located the offices of the State Health Officer including the Budget Office, and the Office of the Director of Publicity. The Office of the Director of Local Health Administration is also located on the sixth floor, as well as offices of the Administration Section, the Public Health Nursing Section, Mental Health Section, Health Education Section, and School Health Section.

The building is equipped with two passenger elevators and a dumb-waiter. The dumb-waiter passes through that portion of the building in which are housed the Birth and Death Certificates, the Central Files, the Personnel Office, and the Budget Office. This permits the rapid carrying of records from one office to another and eliminates to a considerable extent the need for messenger service.

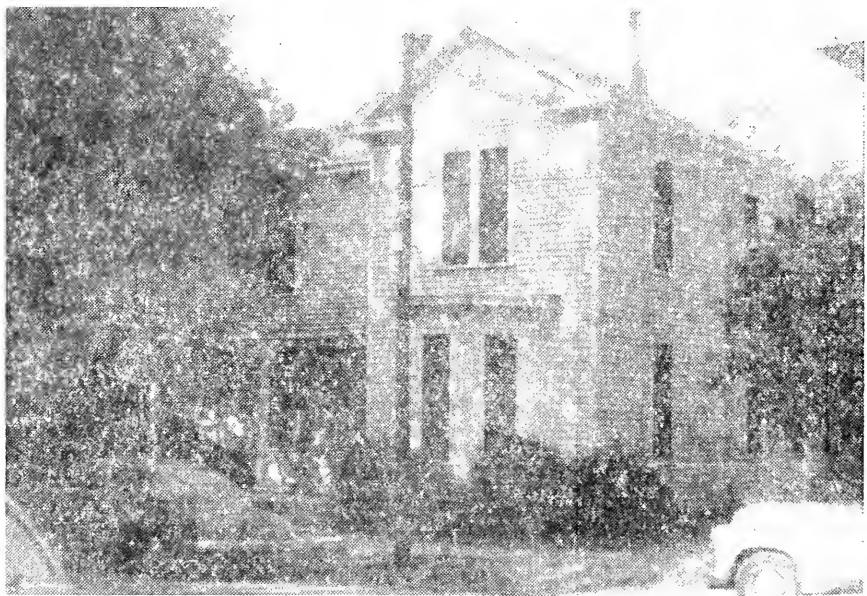
The Cooper Bronzes were purchased with funds made available by voluntary

gifts from public health workers throughout the State, many of whom had worked with Dr. Cooper through the years. Others gave because they admired and appreciated the great contributions which he had made to public health work in North Carolina.

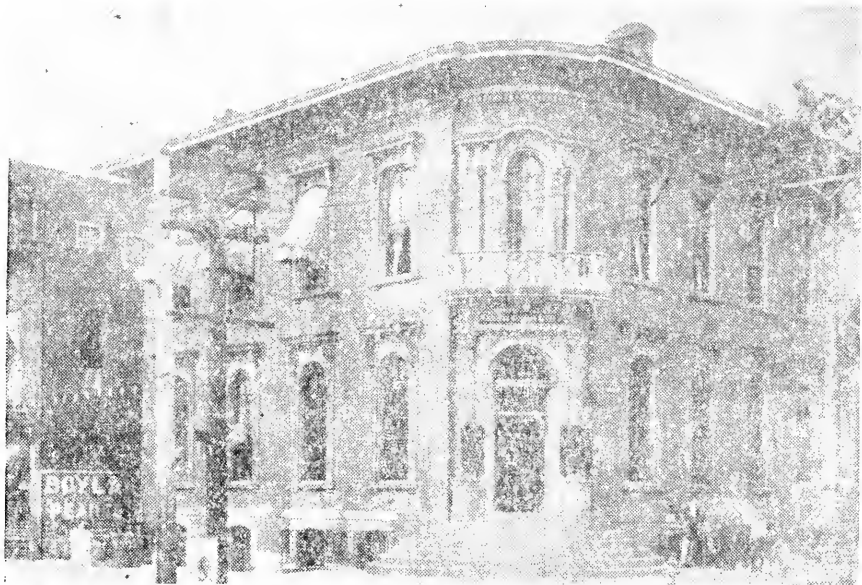
To Dr. Cooper the State owes a debt of gratitude. He became concerned about North Carolina's public health problems as a young man. He entered public health when funds were pitifully small and problems staggeringly great. When he began to practice preventive medicine, there was hardly a period when the State was not ravaged by an epidemic of one disease or another. Summers were filled with dread of typhoid, dysentery and malaria. In the Fall there were always epidemics of diphtheria. In the Winter smallpox was usually prevalent. Maternal mortality and infant mortality rates were distressingly high. Before joining the State Board of Health, Dr. Cooper demonstrated in Sampson County that public health procedures could produce results. During his thirty-five years of service with the North Carolina State Board of Health he attacked all of these and many other public health problems. He devoted all of his physical strength, all of his mental ability, and all of his resourcefulness to the effort to make North Carolina a better place in which to live. He lived to see many marked improvements. Even after he passed the three score year and ten mark—Dr. Cooper did not diminish his effort to make further contributions to the well being of North Carolina. During his period of service he saw North Carolina transformed from a State where health hazards were great to a State where health conditions are favorable. No longer are people afraid to come to North Carolina. When the history of public health is written, it will be essentially a biography of George Marion Cooper. The State Board of Health acting in accordance with authorization of the General Assembly named the new Health Building the George Marion Cooper Memorial Health Building.



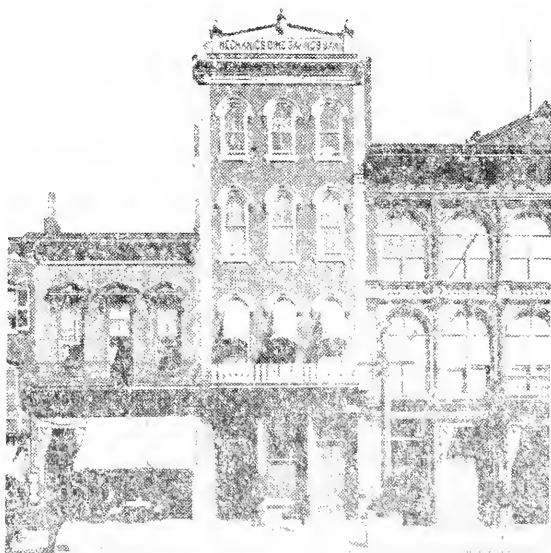
The first office of the State Board of Health was located in Wilmington, North Carolina, 201 Chestnut Street—the office of Dr. Thomas Fanning Wood. This picture was taken in 1947 shortly before the building was demolished to make possible the construction of a department store.



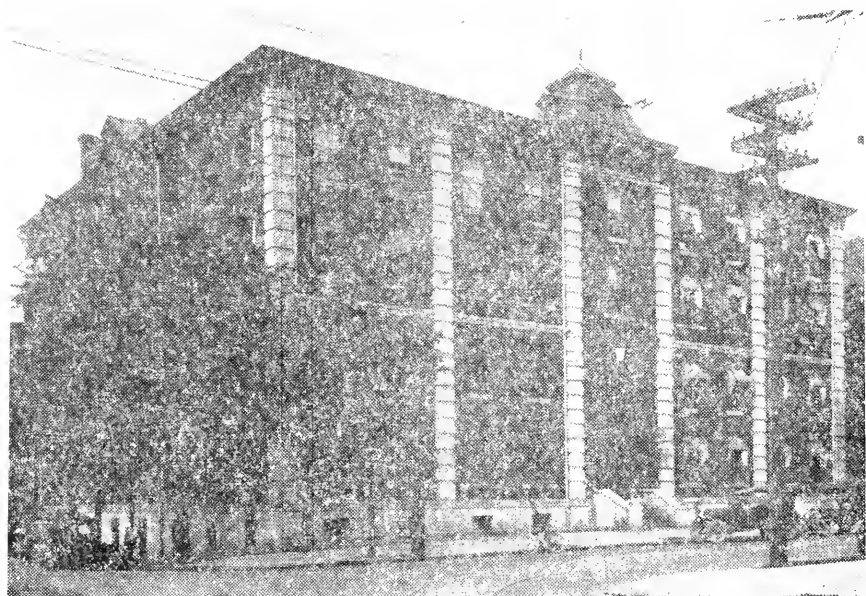
The second office of the State Board of Health was located at 217 North Wilmington Street, the building occupied by Dr. Richard H. Lewis, the State's second Health Officer. This building is now standing.



When Dr. Lewis moved his office to this building it was known as the Round Step Bank Building. It was demolished to make room for the Raleigh Building now standing at the corner of Hargett and Fayetteville Streets. This picture is from the Albert Barden Collection.



When Dr. William S. Rankin became North Carolina's first whole-time State Health Officer in 1909 his offices were located in the Mechanics Dime Savings Bank Building, 121 Fayetteville Street, until 1913. This photograph is from the Albert Barden Collection.



In 1913—for the first time, The State Board of Health moved into a building owned by the State of North Carolina, then known as the Red Brick Building located at the corner of Edenton and Salisbury Streets—now known as the Labor Building. This picture—from the Albert Barden Collection—was taken about 1920.



In 1928 the office of the State Board of Health was moved to a building at the corner of Jones and Danton Streets. This building was formerly part of the North Carolina School for the Blind. It became known as the Health Building.



A portion of the Central Tabulating Unit of the Public Health Statistics Section, located on the first floor of the Cooper Memorial Building.



The Board Room on the sixth floor of the Cooper Memorial Building—where the North Carolina State Board of Health meets to transact business, where also the Health Officer can have staff meetings and hold conferences.





GEORGE MARION COOPER, M.D., LL.D.  
1876 1950

TO HIM THIS BUILDING IS DEDICATED AS A MEMORIAL BY SPECIAL ACT OF THE GENERAL ASSEMBLY OF NORTH CAROLINA 1951. A DISTINGUISHED NORTH CAROLINIAN FOR THIRTY SEVEN YEARS HE RENDERED UNSELFISH AND ABLE SERVICE TO HIS STATE. IN RECOGNITION OF HIS LEADERSHIP IN PUBLIC HEALTH FIELDS THE UNIVERSITY OF NORTH CAROLINA CONFERRED THE DEGREE OF LL.D. UPON HIM.

HIS MOST EMINENT ACHIEVEMENTS WERE IN THE JOINT DOMAINS OF MATERNAL AND CHILD HEALTH. UNDERPRIVILEGED MOTHERS AND CHILDREN WERE HIS GREATEST BENEFICIARIES AND FOR THEM HE LABORED UNTIRINGLY AND EFFECTIVELY.

HIS PATTERNS IN PUBLIC HEALTH ADMINISTRATION HAVE LED THE WAY FOR OTHERS IN THE NATION AND THE WORLD.

HE WAS ACCLAIMED BY HIS FELLOW PHYSICIANS FOR HIS SERVICE TO HUMANITY. GIVEN WITHOUT STINT OR THOUGHT OF SELF AN INSPIRED ZEAL LED HIM CONTINUALLY TO STRIVE TOWARD PERFECTION IN HIS CHOSEN FIELD.

HE DEFENDED HONESTY AND NEVER COMPROMISED INTEGRITY.



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# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

**This Bulletin will be sent free to any citizen of the State upon request**

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Vol. 69

NOVEMBER, 1954

No. 11



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**TUBERCULOSIS**

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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria	Measles	Residential Sewage
Flies	Scarlet Fever	Disposal Plants
Hookworm Disease	Teeth	Sanitary Privies
Infantile Paralysis	Typhoid Fever	Water Supplies
Influenza	Typhus Fever	Whooping Cough
Malaria	Venereal Diseases	

### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Five and Six Months
Prenatal Letters (series of nine monthly letters)	Seven and Eight Months
The Expectant Mother	Nine Months to One Year
Infant Care	One to Two Years
The Prevention of Infantile Diarrhea	Two to Six Years
Breast Feeding	Instructions for North Carolina Midwives
Table of Heights and Weights	Your Child From One to Six
Baby's Daily Schedule	Your Child From Six to Twelve
First Four Months	Guiding the Adolescent

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# Health Bulletin

PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. 69

NOVEMBER, 1954

No. 11

J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## ACTIVITIES OF THE TUBERCULOSIS CONTROL SECTION, DIVISION OF EPIDEMIOLOGY

By WILLIAM A. SMITH, M.D.  
State Board of Health, Raleigh, N. C.

### 1. General

The Tuberculosis Control Section, Division of Epidemiology, has been actively operating for a period of over eight years conducting chest x-ray surveys throughout the state. The installation of the Section in the Board of Health organization was done after definite proof had been shown that chest x-ray surveys were a sound method for the detection of tuberculosis of the lung. X-rays of the chest were done on all persons inducted in the Army during World War II and also a chest x-ray was done on separation from the service. Prior to the War an experimental x-ray survey of Civilian Conservation Corps enrollees was done at Fort Dix, New Jersey and such a survey clearly demonstrated that the examination was of much value in demonstrating chest disease in persons when such disease was not found by ordinary methods.

The Tuberculosis Section owns an office trailer which accompanies the community-wide survey group, and also a trailer which houses the 14x17 x-ray machine and this is used as a retake center during and immediately after community-wide surveys. Unfortunately the Section does not have sufficient funds or personnel to operate such a

retake center during special surveys when one to two x-ray units are used. The Section also owns six tractors for the trailers, one Chevrolet Carry-All; three additional photoroentgen units, which are on loan, as well as some minor equipment on loan to counties and to the State Hospital in Raleigh. The photoroentgen units on loan are located at Duke University Hospital in Durham; Baptist Hospital, Winston-Salem; and the Union Memorial Hospital, Monroe.

Personnel consists of one full-time physician, the Director; two part-time physicians, film readers, two clerks in the field, two clerks in the central office, one part-time darkroom technician in the central office; nine x-ray technicians in the field, one part-time consultant nurse, and one health educator. The health educator expects to resign December 31, 1954.

### 2. MISSION

In general the mission of the Tuberculosis Section is to:

a. Conduct chest x-ray surveys among the general population and special groups for the purpose of detecting tuberculosis of the lung, particularly in the early stages, and also to detect

other chest diseases such as tumors, cardiovascular abnormalities, and other pathological conditions which can be detected by x-ray.

b. Conduct health educational activities among the population prior to and during surveys and on occasion conducting health educational activities prior to the survey of special groups.

c. Emphasize home follow-up by local health department and private physicians of those persons who show lung diseases found during surveys.

d. Plan surveys with the local health officer, county officials, the local tuberculosis association and other persons interested in tuberculosis control.

e. Maintain liaison with state institutions and other agencies for better case finding. These institutions are:

1. The State Sanatoria for the Treatment of Tuberculosis.
2. State Mental Institutions.
3. Central Prison in Raleigh.
4. State educational institutions.
5. N. C. Tuberculosis Association and local tuberculosis associations.
6. State School for Blind.
7. Local health departments.
8. The Veterans Administration
9. The State Division of Vocational Rehabilitation.
10. The State Welfare Department.

f. Interpret chest films for Forsyth, Cabarrus, Cumberland, and Stanly Counties as well as the State Hospital at Goldsboro. These films are taken during routine chest x-ray surveys by these counties.

g. Interpret in the central office all 70 mm. films made during mass and special surveys by our units.

h. Whenever surplus equipment is available furnish such equipment on loan to state agencies.

i. Furnish to counties certain blank forms and also publicity materials which are used in surveys.

j. Cooperate with the Heart Section, Division of Personal Health by furnishing to that Section a report of cardiovascular abnormalities found during surveys.

k. Cooperate with the Cancer Section.

1. Cooperate with the Nutrition Section, Division of Personal Health. The Nutrition Section will exercise:

1. Greater emphasis on the importance of nutrition in health.
2. Guidance of families with limited incomes in wise food selection and food purchasing practices.
3. More attention to the nutritional adequacy of the diet of patients discharged from the sanatorium.
4. Financial assistance in securing a good diet for discharged patients with inadequate incomes.

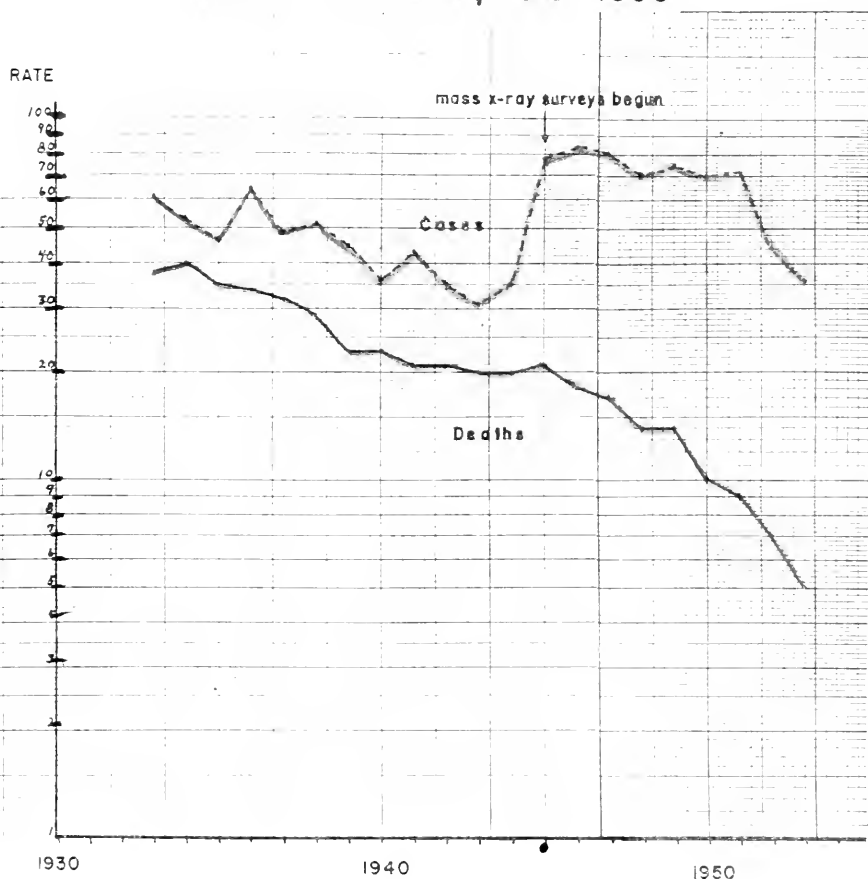
Further participation of the Nutrition Section will consist of:

1. District Nutritionist from the State Board of Health will continue to offer in-service training to nurses with respect to diet and tuberculosis.
2. Nutritionists will give consultation service to individual nurses carrying tuberculosis patients in their case load who seek guidance on adequacy of diets and budgeting.
3. Nutritionists and dietitians will work with food service managers and trained dietitians in the state and county sanatoria system on educational programs in nutrition and meal planning for the institutions.
4. Nutritionists will give assistance to food service managers responsible for planning and providing modified diets for patients.
5. Nutrition Section will work with the State Tuberculosis Association on joint plans for educational programs for tuberculosis patients.

### 3. ACTIVITIES

The principal effort of this Section is directed toward case finding through chest x-ray surveys by our units in the field and by our x-ray units on loan to hospitals. We have never had sufficient funds to operate chest clinics, but have, until the fiscal year 1953-54, allocated a portion of our budget to counties for tuberculosis control. Chest x-ray surveys are fruitful in finding

## WHITE TUBERCULOSIS CASES AND DEATHS PER 100,000 POPULATION NORTH CAROLINA, 1918 - 1953



SOURCE: ANNUAL REPORT OF THE PHSS, PART I & II

PHSS 9/17/54

the person who, unknown to himself, has the disease and for some reason or other does not consult his physician and lives among the general population with his tuberculosis.

Since our surveys began in July, 1945 our units have made over 2,150,000 miniature x-rays of the chest. It is estimated that the x-rayable population

of the State is approximately 2,775,000 (persons 15 years and over) and so in numbers over 75 per cent of the x-rayable population has been examined. These activities combined with the 84 county and city health departments offer to the citizen of the state ample opportunity for chest examination. X-ray of the chest is considered the

most reliable method of diagnosis of chest disease and offers the best opportunity for case supervision. Under these conditions there is no reason why citizens in North Carolina should neglect an opportunity for chest examination.

In community-wide surveys we have established an effective follow-up or re-examination of those persons who show suspected chest disease from the small or miniature film made by the unit conducting the survey. The follow-up is conducted at the retake trailer which is at the site of the community-wide survey. At this trailer a large or 14x17 x-ray plate is made and this plate is sent to the Central Sanatorium at McCain where an x-ray diagnosis is made. In these surveys it has been found that 5.5 persons in every thousand persons examined show evidence of tuberculosis of the lung. After clinical evaluation this rate is reduced and many of these cases are found to have old scars from tuberculosis, while a sizeable number show that medical observation is necessary. In addition to tuberculosis our surveys reveal heart abnormalities, occasionally tumors of the lung and other diseases which can be detected by x-ray.

During the fiscal year 1945-46, 56,939 miniature x-rays of the chest were taken and since that time the total has averaged a quarter million a year for the eight-year period. The year 1950 was the most active year when over 300,000 persons were x-rayed. Incidentally, in 1950 in the United States as a whole there were two million more persons x-rayed than in 1951. During the fiscal year ending June 30, 1954 our x-ray field units x-rayed over 20,000 more persons than during the preceding year.

The policy in chest surveys should not be to make a record in the number of persons x-rayed but an effort must be made to include the survey areas of known high prevalence, contacts, the older age group, and the lower income groups. Our surveys habitually include mental institutions which have a rate higher than the general population. The rate in mental institutions in this

State is lower than it was during earlier surveys and is becoming progressively lower.

We have found that the survey of the first 30 per cent of the population can be quickly done. In special surveys using one to two units, a unit in a location such as the courthouse square, will take as many as 500 persons per day, day in and day out. Many of these short surveys have been productive in finding tuberculosis when there was an intensive publicity program.

In special surveys of short duration using one to two units, it is not possible for us to furnish a follow-up technician to complete the re-examination of those persons suspected of having chest disease from the miniature film, and hence the final results in some of these surveys are not as complete as results from a community-wide survey. In some counties, however, the follow-up has been thorough.

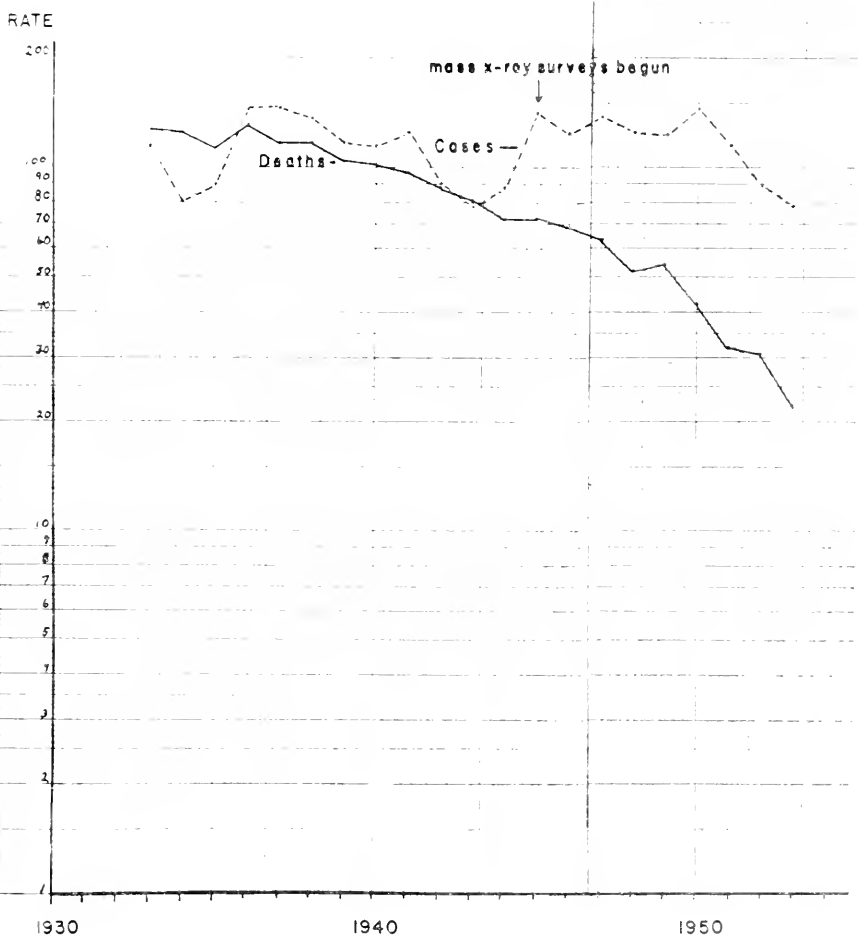
Community-wide surveys have been completed in 84 counties; twenty counties have had community-wide surveys twice. Special surveys have been conducted in over 200 localities. Four mobile x-ray units are generally used in community-wide surveys but during the present calendar year we have used six units in two surveys.

Fifteen counties conduct their own surveys using mobile or portable units. One county, Mecklenburg, has been surveyed by U.S.P.H.S. There are only four counties which have not had a survey of some kind by the State Board of Health. These are Mecklenburg, Lee, Surry, and Alamance. Mecklenburg, however, has been scheduled by us for a special survey in November-December this year. Lee, Surry, and Alamance counties conduct their own surveys using a mobile or portable x-ray unit.

#### 4. ACTIVITIES DURING THE FISCAL YEAR 1953-54.

During the fiscal year 1953-54 community-wide surveys using four units, and in one survey six units, were conducted in twelve counties and special surveys using one to two units

NONWHITE TUBERCULOSIS CASES AND DEATHS  
PER 100,000 POPULATION  
NORTH CAROLINA, 1918-1953



SOURCE: ANNUAL REPORT OF THE PHSS, PART I & II

PHSS 9/17/54

were conducted in forty-one localities. Over 253,000 persons were x-rayed in mass and special surveys. During special surveys five mental institutions, the School for the Deaf in Morganton, and five colleges were surveyed. In one special survey, Halifax County, 9,344 persons were x-rayed; two x-ray units were used for a period of twelve days. During this survey there was a wide publicity campaign together with an active health department. The findings in this survey are:

#### (Diagnosis by 14x17 film)

Total number persons examined	9,344
New cases—active tuberculosis	12
New Case—questionably active	1
Old case—found to be reactivated	1
Old cases—inactive	10
Questionable tuberculosis— diagnosis reserved	1
Suspected tuberculosis	25
Healed primary	7
Pulmonary scars	24
Tumors of the lung	3
Cardio-vascular pathology	21
Other pathology	34

This is an example of superior planning on the part of the Health Officer with resultant high case finding.

#### 5. MORBIDITY AND MORTALITY.

Tuberculosis for the first time since vital statistic records have been kept in the State Board of Health (October, 1913) was no longer one of the leading causes of death in 1953. There were 402 deaths from tuberculosis or a rate of 9.5 per 100,000 population. Tuberculosis now ranks as the twelfth cause of death and is preceded by accidents, automobile and other accidents, and immediately by congenital malformations and diabetes.

In view of this decrease in death rate in North Carolina as well as in the United States as a whole, there has been a tendency to consider tuberculosis as no longer being a health problem. However, such a belief is not supported by facts. Estimates made in 1952 show that 24,195 persons in the United States died from tuberculosis and that 109,837

new cases were reported. In 1952 it was estimated that there were 1,200,000 cases both active and inactive in the United States, of which there were 400,000 active cases and of these, 150,000 were unknown to private physicians or health departments.

In North Carolina in 1952 there were 1,430 active cases reported to the State Board of Health, and in 1953 there were 1,350 active cases reported or sufficient hospital cases in each year to occupy all beds in two of the State sanatoria.

According to Mary Dempsey, Statistician of the National Tuberculosis Association, "probably more persons are under treatment for tuberculosis today than ever before the case in this country." The new drugs along with better surgery and a better economy is saving lives. There is also being built up a great reservoir of inactive cases from year to year which requires continual observation. As time goes on, this reservoir will increase, thereby increasing the problem of observation.

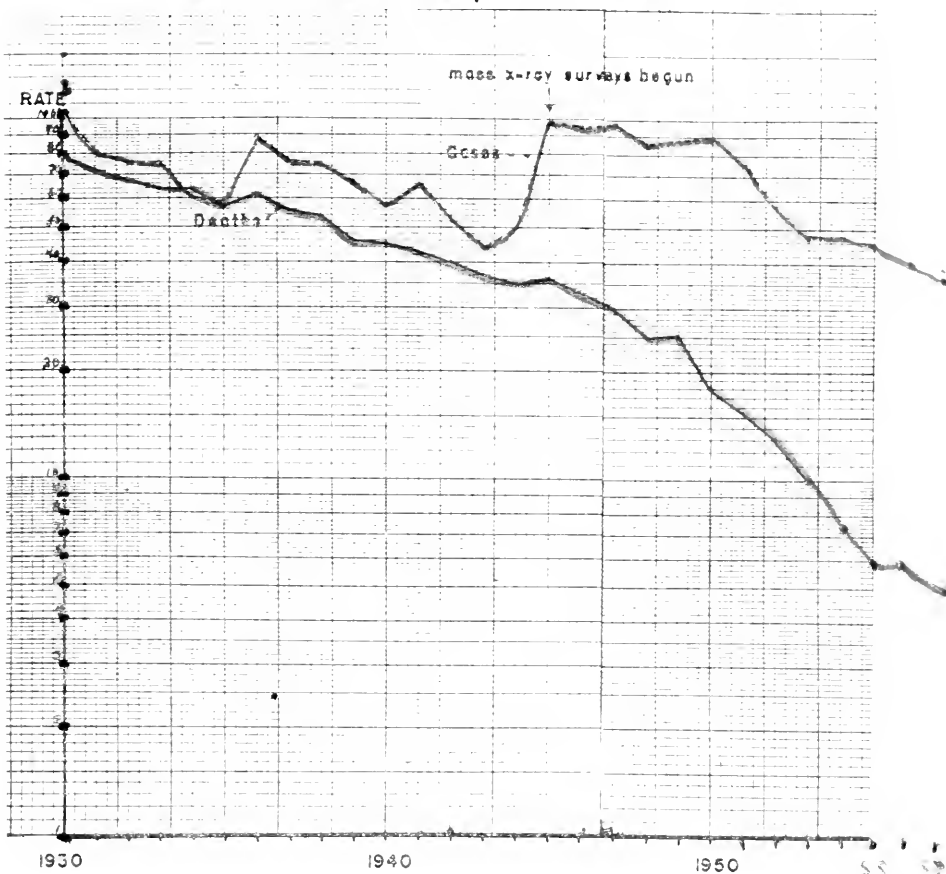
In North Carolina for the first time in several years there were more new cases reported for the first eight months of 1954 than for the similar period in 1953. The number was not great, 1,434, as compared to 1,395, but the increase may be significant.

Tuberculosis in this state is a challenge to the Negro race. The non-white (almost entirely Negro) death rate in 1953 was 22.2 per 100,000 population or four times the white rate which was 5.1. The non-white case rate (new cases) was 78.4 as compared to the white rate of 36.4. In this state 27 per cent of the population is non-white and in the United States as a whole the non-white population is 10.5 per cent of the total population.

A comparison of morbidity and mortality rates of the white and non-white races for the past five years is tabulated below. The 1918 deaths and death rate only is shown for comparison. The 1918 morbidity rates for whites and non-white are not available.



# TUBERCULOSIS CASES AND DEATHS PER 100,000 POPULATION NORTH CAROLINA, 1918-1953



SOURCE: ANNUAL REPORT OF THE PHSS, PART I & II

PHSS 9/17/54

## MORBIDITY—NORTH CAROLINA

### Tuberculosis Cases, All Forms

1918-1953

Total	White	Other
Year No. Rate	No. Rate	No. Rate
1918 3514 139.3		
1949 3402 88.0	2076 75.0	1325 120.7
1950 3653 89.9	2072 69.5	1581 146.6
1951 3105 75.3	1870 61.6	1235 113.5
1952 2326 55.7	1346 43.7	980 89.4
1953 2001 47.4	1136 36.4	865 78.4

## MORTALITY—NORTH CAROLINA

### Tuberculosis Deaths, All Forms

1918-1953

Total	White	Other
Year No. Rate	No. Rate	No. Rate
1918 3412 135.3	1615 92.4	1797 232.1
1949 972 25.2	385 13.9	587 53.5
1950 748 18.4	297 10.0	451 41.8
1951 630 15.3	264 8.7	366 33.6
1952 543 13.0	208 6.8	335 30.6
1953 402 9.5	157 5.0	245 22.2

In our chest x-ray surveys there has always been a good response by the Negro race and a recent survey of one of the eastern counties shows that the response has been exceptionally good.

The State hospital construction program is now completed and the waiting period for admission should not be long. This will afford early hospitalization, thereby removing from the home the active case.

The fact that the death and case rates in this state, from last available figures, is below the National rate, indicates that North Carolina is performing its duty in the control of tuberculosis. The National death rate in 1952 was 15.5 and the North Carolina rate was 13.0; the National case rate for the same year was 69.9 and the case rate for North Carolina during the same year was 55.7.

#### 6. COMPARISON OF COMMUNITY-WIDE OR MASS SURVEYS AND SPECIAL SURVEYS.

As the principal mission of the Tuberculosis Section is to conduct chest x-ray surveys of the population, the question of the length of time to continue mass or community-wide surveys has been considered, also the direction

case finding should take. It is agreed that the scope of surveys should be qualitative instead of quantitative and not strive toward numbers alone. In surveys it has been shown that those persons who have lung trouble visit the mobile units either at the beginning of the survey or near the termination of the survey, and also many ask for chest examination at the health department just before the survey begins and also just after the survey team leaves the area.

Thirty per cent of the population responds quickly to a survey, but a strong publicity program is required to persuade the remaining 70 per cent to visit the mobile units. Short surveys using one to two units will show a higher percentage turnout of population during a twelve-month period than the turnout for the mass survey group of four to five units which remain in the area for a period long enough to x-ray the entire x-rayable population. In our experience the follow-up in case of the special surveys is not as complete as in mass surveys and this will account for a lower case rate found in special surveys.

A comparison of the two groups for the fiscal year 1950-51 to and including 1952-53 is tabulated below:

##### Period 1950-51

	No. Persons X-Rayed	No. Examined Per Unit	Rate Suspects Per 1000 Examined
Mass X-Ray Group ----- (5 x-ray units)	194,810	38,962	4.8
Special X-Ray Group ----- (2 x-ray units)	87,710 282,520	43,855	4.0

##### Period 1951-52

Mass X-Ray Group ----- (4 x-ray units)	136,361	34,090	5.8
Special X-Ray Group ----- (2 x-ray units)	106,521 242,882	53,260	5.1

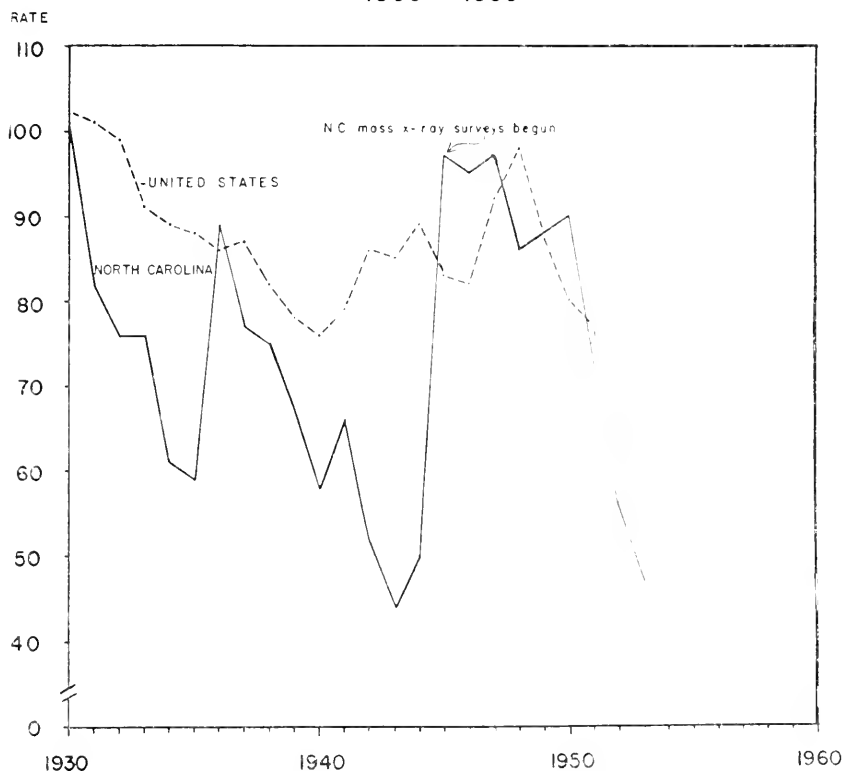
##### Period 1952-53

Mass X-Ray Group ----- (4 x-ray units)	134,336	33,584	8.7
Special X-Ray Group ----- (2 x-ray units)	97,585 231,921	48,792	4.5

The above comparison of community-wide or mass surveys when four to six x-ray units were used for a sufficient

length of time to x-ray the entire population, and special surveys using one to two units for from five to twenty

# TUBERCULOSIS MORBIDITY RATES PER 100,000 POPULATION: UNITED STATES AND NORTH CAROLINA, 1930 - 1953



SOURCE: UNITED STATES - THE AMERICAN REVIEW OF TUBERCULOSIS, JUNE 1953

NORTH CAROLINA - PHSS, 1930 - 1953

PHSS 9-17-54

days, shows the findings of suspects to be uniformly higher in the mass surveys.

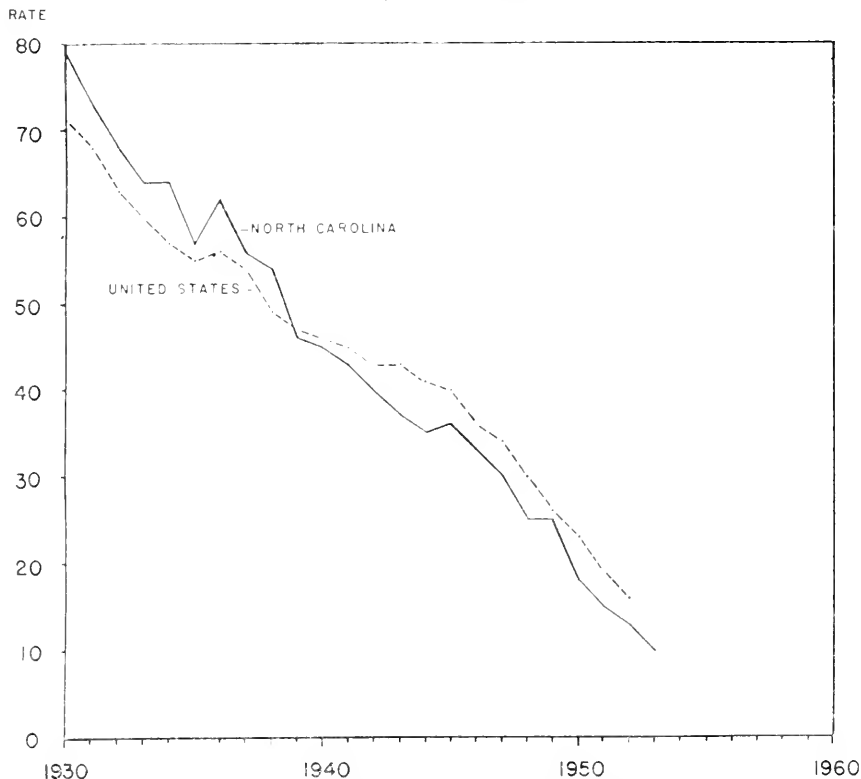
Special surveys include areas of low as well as high prevalence, such as schools and colleges of low prevalence, and mental institutions of high prevalence. Special surveys also include industrial plants as well as the general population. Follow-up activities are generally not as complete in special surveys as in mass surveys, and for a four-year period were found to be 13 per cent lower. In mass surveys the immediate follow-up re-examinations are conducted by our follow-up technician and

in special surveys all re-examinations are conducted by the health department.

## 7. GENERAL COMMENT AND FUTURE PLANNING.

1. To quote directly from the proceedings of the meeting of the State Tuberculosis Control Officers held during the Fiftieth Meeting of the National Tuberculosis Association at Atlantic City, New Jersey, in May 1954, "Reports from those conducting community-wide (mass) surveys indicate that it will be quite some time before we reach the point at which programs should

**TUBERCULOSIS MORTALITY RATES PER 100,000 POPULATION:  
UNITED STATES AND NORTH CAROLINA,  
1930 - 1953**



SOURCE UNITED STATES - THE AMERICAN REVIEW OF TUBERCULOSIS, JUNE 1953

NORTH CAROLINA - NOVS, 1930-1950, PHSS, 1951-1953

PHSS 7 54

be discontinued. From several sources it was noted that it is of increasing importance to evaluate critically the yield of community-wide programs, and it is of increasing importance to insure adequate follow-up of suspects."

It was also pointed out that certain areas should be "pin-pointed." These are contacts, hospital admissions, clinic cases, mental and penal institutions, areas of known infection, the older age group and in the case of this state the non-white population.

For the coming year there will be no change in our general policy. Feder-

al funds for the fiscal year 1954-1955 have been restored and we can operate our six mobile units. Mass and special surveys have been scheduled throughout 1954 and 1955. There is one period of seventeen days open in January, 1956 for mass survey but the remainder of 1956 has been scheduled. Special surveys have been scheduled in 1956 from early August to the last of the year. One county has requested a mass survey for 1957.

The present fortunate situation in tuberculosis control has been brought about by exercising continual pressure

on all means of control, such as case finding, clinic, hospital, nursing, laboratory, welfare, rehabilitation and statistical services and keeping continually before the public the danger of tuberculosis and that any relaxation of any of the means of control could result in an increase of prevalence.

2. Future planning should be directed towards emphasizing.

a. Case finding through routine chest x-ray of all hospital admissions and clinic cases; continued chest x-ray surveys of the general population and special groups.

b. Isolation, and if possible, hospitalization of active cases.

c. Follow-up of the discharged hospital case and the strict supervision of the person who has left hospital with or against medical advice.

d. More research.

e. Continued health education.

f. More tuberculin testing.

3. Charts which were published last year showing morbidity and mortality rates in this State as compared to the National rate, and also the effect of x-ray surveys on case reporting are brought up to date and again published.

## THE NORTH CAROLINA TRUDEAU SOCIETY AND TUBERCULOSIS CONTROL

By E. E. MENEFEE, M.D., PRESIDENT

North Carolina Trudeau Society

Duke University

Durham, North Carolina

The North Carolina Trudeau Society is the Medical Section of the North Carolina Tuberculosis Association, just as the American Trudeau Society is the Medical Section of the National Tuberculosis Association. North Carolina was one of the first of the Southern states to organize its Trudeau group. We have felt that the requirements for membership should not be rigid, and it has never been our desire that membership be limited to specialists or sanatorium physicians. On the other hand, we think that every physician in the State of North Carolina who is interested in the problem of tuberculosis, whether he be located in a sanatorium, be specializing in a large city, be doing public health work in a county, or general practice in a village, should be a member of the Society. The more physicians that we have who are definitely interested in the diagnosis, treatment and follow-up care of patients with tuberculosis, the sooner we will eradicate this disease in the State. The purpose of the North Carolina Trudeau Society is to stimulate interest in the disease, to disseminate the latest information concerning its

treatment and to correlate the efforts of the practitioner, public health officer and sanatorium director towards the common goal of curing the disease. Our membership has grown rapidly, and at the present time we have nearly one hundred physicians who are active members.

The North Carolina Trudeau Society, as a subdivision of the North Carolina Tuberculosis Association, meets with the association each year. One afternoon and evening are devoted to a scientific program directed by various specialists from the State and bringing to the Society the latest information available in the treatment of tuberculosis and other chronic pulmonary diseases. This meeting is open not only to members of the group but to every physician in the State. It is also our custom to present one of the outstanding tuberculosis leaders in the United States at this meeting. A second program sponsored by the North Carolina Trudeau Society in conjunction with the Trudeau Societies in Virginia and West Virginia is the consecutive case conference which is held usually in Roanoke, Virginia, each year. Usually

around twenty-five physicians from each state are invited and there is frank and open discussion among them concerning the problems of handling tuberculous patients. We have found these conferences extremely stimulating and worthwhile. During the past year one of our major efforts has been directed towards the general practitioner. It is our earnest desire to stimulate his interest in the disease and to keep him posted as to the latest developments and what he, as a practitioner, can do to help the all-out fight. We were fortunate in our last annual meeting to have the President and Secretary of the North Carolina Academy of General Practice in attendance. Through this contact we were able to set up a program of graduate medical education, and our representatives went to the North Carolina Academy of General Practice annual meeting and gave a course concerning tuberculosis and its control.

It is well understood that the basic problem of pulmonary tuberculosis control can be simplified into (1) diagnosis, (2) treatment, and (3) rehabilitation and follow-up. Needless to say, associated with this is the very great social and economic problem caused by the disease. Diagnosis, particularly early diagnosis, is accomplished only by means of x-rays. Not only do we want and need continuation of surveys and x-raying of all hospital admissions, but we are trying to impress upon the public and upon the practitioners of medicine that every person should be x-rayed at least once a year. Every patient who has any cough that doesn't promptly disappear, who coughs up any blood, whether it be a mere streak or cupful, deserves immediate x-ray studies. The same can be said for any person who simply has general malaise or has lost weight without apparent cause or feels tired and fatigued. Obviously, there are many patients who have these symptoms who do not have tuberculosis, but nevertheless the appearance of any of these signs or symptoms is

sufficient to warrant an x-ray of the chest. If the x-ray is suspicious, then the physician should carefully examine the sputum. This can be done by the State laboratory in Raleigh, if it appears more convenient. Consultations either by specialists in private practice or by the staff of the State sanatoriums may well be indicated. The important thing is the early diagnosis of the disease before it becomes far advanced.

At the present time North Carolina is in a favorable position regarding sanatorium beds, and most patients can be hospitalized quite promptly once the diagnosis is proven. In certain instances where immediate hospitalization cannot be obtained, it is possible for the general practitioner to direct therapy until a bed is available. The use of streptomycin usually in doses of one gram two or three times a week, combined with PAS in a total dose of ten to twelve grams a day, will frequently save months. At other times 300 mgms. of INH per day may be substituted for the streptomycin. Basically, however, the old adage of absolute bedrest at home, adequate diet, still must be observed, despite the use of the so-called miracle drugs. The vast majority of early cases will clear up completely on drug therapy plus adequate rest and diet. Cases not detected and brought under treatment until they have reached an advanced stage may require surgery later on. This surgery may be of a nature to collapse the affected lung or, it may be the actual removal of the affected lung or, resection of the diseased area. Finally, after the patient is discharged from the sanatorium as arrested or apparently arrested, he must be carefully followed with repeated x-rays and examinations for a period of years to make certain that there is no recurrence and that he remains well. It is obvious that in such a widespread program as this, complete cooperation of all types of physicians is absolutely necessary. This is the basic goal of the North Carolina Trudeau Society.

# RESIDENT TUBERCULOSIS CASES AND DEATHS BY COLOR WITH RATES PER 100,000 POPULATION: NORTH CAROLINA AND EACH COUNTY, 1953

AREA	CASES						DEATHS					
	Total			White			Total			White		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
North Carolina	2,061	47.4	1,136	36.4	865	78.4	402	9.5	157	5.0	245	22.2
Alamance.....	22	29.1	12	19.5	10	71.3	9	11.9	3	4.9	6	42.8
Alexander.....	4	26.8	4	28.9	.....	.....	1	6.7	1	7.2	.....	.....
Alleghany.....	5	37.1	3	38.3	.....	.....	.....	.....	.....	.....	.....	.....
Anson.....	7	26.7	1	7.4	6	47.2	2	7.6	.....	.....	2	15.7
Ashe.....	3	13.9	3	14.0	.....	.....	1	4.6	1	4.7	.....	.....
Avery.....	1	7.5	1	7.6	.....	.....	1	7.5	1	7.6	.....	.....
Beaufort.....	14	50.9	6	25.6	13	93.6	2	5.4	.....	.....	2	14.4
Bertie.....	15	56.6	5	48.1	10	62.1	3	11.3	1	9.6	2	12.4
Bladen.....	11	36.0	4	22.3	7	51.6	2	6.6	1	5.6	1	8.0
Brunswick.....	13	65.2	5	40.0	8	107.6	2	10.0	.....	.....	2	26.9
Buncombe.....	91	70.3	70	61.1	21	140.1	12	9.3	5	4.4	7	46.7
Burke.....	19	39.8	13	29.4	6	172.6	3	6.3	2	4.5	1	28.8
Cabarrus.....	19	29.1	9	16.2	10	102.6	3	4.6	2	3.6	1	10.3
Caldwell.....	27	58.9	21	49.2	6	193.4	3	6.5	3	7.0	.....	.....
Camden.....	5	97.0	4	124.8	1	51.3	1	19.4	1	31.2	.....	.....
Carteret.....	1	4.1	.....	.....	1	33.6	1	4.1	1	4.6	.....	.....
Caswell.....	8	37.8	2	18.3	6	55.9	4	18.9	1	9.1	3	29.4
Catawba.....	15	23.0	10	16.8	5	87.1	1	1.5	1	1.7	.....	.....
Chatham.....	3	11.7	2	11.5	1	12.2	1	3.9	.....	.....	1	12.2
Cherokee.....	14	77.2	14	78.8	.....	.....	4	22.1	4	22.5	.....	.....
Chowan.....	7	54.5	1	13.6	6	109.5	5	38.9	1	13.6	4	73.0
Clay.....	2	34.0	2	34.4	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland.....	15	22.6	4	7.7	11	76.0	4	6.0	1	1.9	3	20.7
Columbus.....	18	34.5	13	38.0	5	27.8	4	7.7	2	5.8	2	11.1
Craven.....	33	60.5	13	34.1	20	121.9	9	16.5	1	2.6	8	48.7
Cumberland.....	76	70.4	43	54.5	33	113.9	9	8.3	4	5.1	5	17.3
Currituck.....	5	82.9	3	71.9	2	107.2	.....	.....	.....	.....	.....	.....
Dare.....	3	57.7	2	41.3	1	285.7	.....	.....	.....	.....	.....	.....
Davidson.....	14	21.5	6	10.2	8	122.0	5	7.7	1	1.7	4	61.0
Davie.....	4	25.7	3	22.3	1	46.6	.....	.....	.....	.....	.....	.....
Duplin.....	17	41.0	5	19.2	12	77.4	4	9.6	1	3.8	3	19.3
Durham.....	50	46.0	19	26.0	31	87.2	11	10.1	3	4.1	8	22.5
Edgecombe.....	41	78.2	11	43.0	30	111.7	12	22.9	.....	.....	12	44.7
Forsyth.....	51	35.4	29	26.1	25	60.2	17	11.1	5	4.5	12	28.9
Franklin.....	27	85.3	6	35.4	21	142.8	6	19.0	1	5.9	5	34.0
Gaston.....	34	28.7	29	28.2	5	32.0	2	1.7	2	1.9	.....	.....
Gates.....	3	31.9	2	46.0	1	19.8	.....	.....	.....	.....	.....	.....
Graham.....	7	59.4	7	102.9	.....	.....	.....	.....	.....	.....	.....	.....
Granville.....	8	24.5	2	11.2	6	40.5	1	3.1	.....	.....	1	6.8
Greene.....	8	44.8	1	10.7	7	82.4	4	22.4	1	10.7	3	35.3
Guilford.....	66	32.5	40	24.4	26	66.7	13	6.4	4	2.4	9	23.1
Halifax.....	42	71.2	19	74.1	23	69.0	15	25.4	2	7.8	13	39.0
Harnett.....	38	78.0	18	49.8	20	159.0	4	8.2	2	5.5	2	15.9
Haywood.....	26	67.4	26	68.9	.....	.....	2	5.2	2	5.3	.....	.....
Henderson.....	16	49.2	15	49.3	1	48.8	3	9.2	3	9.9	.....	.....
Hertford.....	18	81.3	9	102.1	9	67.6	.....	.....	.....	.....	.....	.....
Hoke.....	7	43.7	2	31.4	5	51.8	3	18.7	.....	.....	3	31.1
Hyde.....	2	33.2	2	57.8	.....	.....	.....	.....	.....	.....	.....	.....
Iredell.....	29	49.3	23	47.8	6	59.2	8	13.7	3	6.2	5	49.3
Jackson.....	11	57.2	11	62.0	.....	.....	.....	.....	.....	.....	.....	.....
Johnston.....	59	88.6	45	86.5	14	95.9	9	13.5	8	15.4	1	6.9
Jones.....	4	36.3	.....	.....	4	79.1	1	9.1	.....	.....	1	19.8
Lee.....	9	35.9	6	32.1	3	47.1	1	4.0	.....	.....	1	15.7
Lenoir.....	20	42.1	9	33.3	11	53.7	8	16.8	3	11.1	5	24.4
Lincoln.....	6	21.0	5	20.0	1	28.2	1	3.5	.....	.....	1	28.2
McDowell.....	6	22.6	6	23.7	.....	.....	1	3.8	1	4.0	.....	.....
Macon.....	9	55.3	9	56.5	.....	.....	.....	.....	.....	.....	.....	.....
Madison.....	6	30.2	6	30.5	.....	.....	.....	.....	.....	.....	.....	.....
Martin.....	18	63.1	6	42.9	12	82.6	6	21.0	3	21.4	3	20.6
Mecklenburg.....	125	59.0	81	50.7	44	84.4	14	6.6	7	4.4	7	13.4

# RESIDENT TUBERCULOSIS CASES AND DEATHS BY COLOR WITH RATES PER 100,000 POPULATION: NORTH CAROLINA AND EACH COUNTY, 1953

AREA	CASES						DEATHS					
	Total		White		Other		Total		White		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Mitchell.....	13	87.4	12	80.9	1	2381.0	...	...	...	...	...	...
Montgomery.....	7	39.8	2	14.8	5	124.2	...	...	...	...	...	...
Moore.....	17	50.2	9	35.9	8	91.4	2	5.9	1	4.0	1	11.4
Nash.....	33	53.8	10	28.4	23	88.1	7	11.4	2	5.7	5	19.2
New Hanover.....	43	63.0	19	40.0	24	115.7	7	10.3	3	6.3	4	19.3
Northampton.....	18	63.2	8	80.1	10	54.1	7	24.6	2	20.0	5	27.1
Onslow.....	19	38.1	14	32.9	5	68.7	3	6.0	1	2.3	2	27.5
Orange.....	13	34.1	5	17.2	8	87.5	1	2.6	...	...	1	10.9
Pamlico.....	2	19.8	...	...	2	57.4	...	...	...	...	...	...
Pasquotank.....	17	66.5	8	49.7	9	95.0	6	23.5	...	...	6	63.4
Pender.....	6	32.2	2	21.0	4	43.9	2	10.7	...	...	2	21.9
Perquimans.....	5	52.4	2	40.0	3	66.1	2	21.0	1	20.0	1	22.0
Person.....	15	62.1	8	51.7	7	80.9	2	8.3	2	12.9	...	...
Pitt.....	54	83.6	21	60.1	33	111.3	12	18.6	4	11.4	8	27.0
Polk.....	3	26.0	3	29.8	...	...	1	8.7	1	9.9	...	...
Randolph.....	17	32.2	12	24.7	5	116.3	3	5.7	3	6.2	...	...
Richmond.....	16	39.5	14	49.1	2	16.6	3	7.4	2	7.0	1	8.3
Robeson.....	38	41.6	14	36.4	24	45.4	7	7.7	2	5.2	5	9.5
Rockingham.....	41	61.1	22	40.9	19	142.6	3	4.5	2	3.7	1	7.5
Rowan.....	31	40.0	21	32.5	10	77.9	2	2.6	1	1.5	1	7.8
Rutherford.....	14	30.0	9	21.9	5	90.4	4	8.6	2	4.9	2	36.1
Sampson.....	21	41.6	9	28.3	12	64.0	6	11.9	3	9.4	3	16.0
Scotland.....	12	43.9	4	27.2	8	63.3	1	3.7	1	6.8	...	...
Stanly.....	14	36.3	9	26.3	5	115.3	1	2.6	...	...	1	23.1
Stokes.....	7	33.1	7	36.2	...	...	2	9.5	1	5.2	1	55.1
Surry.....	31	66.2	28	63.4	3	113.9	8	17.1	7	15.8	1	38.0
Swain.....	7	76.2	4	52.4	3	193.5	1	10.9	...	...	1	64.5
Transylvania.....	3	18.6	3	19.4	...	...	1	6.2	1	6.5	...	...
Tyrrell.....	2	41.0	2	72.3	...	...	1	20.5	1	36.1	...	...
Union.....	24	55.8	20	59.9	4	41.7	5	11.6	3	9.0	2	20.9
Vance.....	22	67.1	10	55.6	12	81.0	6	18.3	5	27.8	1	6.7
Wake.....	49	33.7	25	24.0	24	58.4	18	12.4	4	3.8	14	34.1
Warren.....	9	38.0	1	12.7	8	50.6	1	4.2	...	...	1	6.3
Washington.....	8	59.4	4	52.5	4	68.4	4	29.7	...	...	4	68.4
Watauga.....	6	32.6	6	32.9	...	...	...	...	...	...	...	...
Wayne.....	30	45.3	12	31.2	18	64.9	11	16.6	4	10.4	7	25.3
Wilkes.....	11	23.9	10	23.1	1	37.2	4	8.7	4	9.2	...	...
Wilson.....	66	118.1	27	80.5	39	174.4	18	32.2	3	8.9	15	67.1
Yadkin.....	6	26.5	4	18.6	2	186.0	...	...	...	...	...	...
Yancey.....	8	51.0	8	50.6	...	...	2	12.5	2	12.6	...	...

Source: Annual Report of Public Health Statistics Section, Part I and Part II, 1953.



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# Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

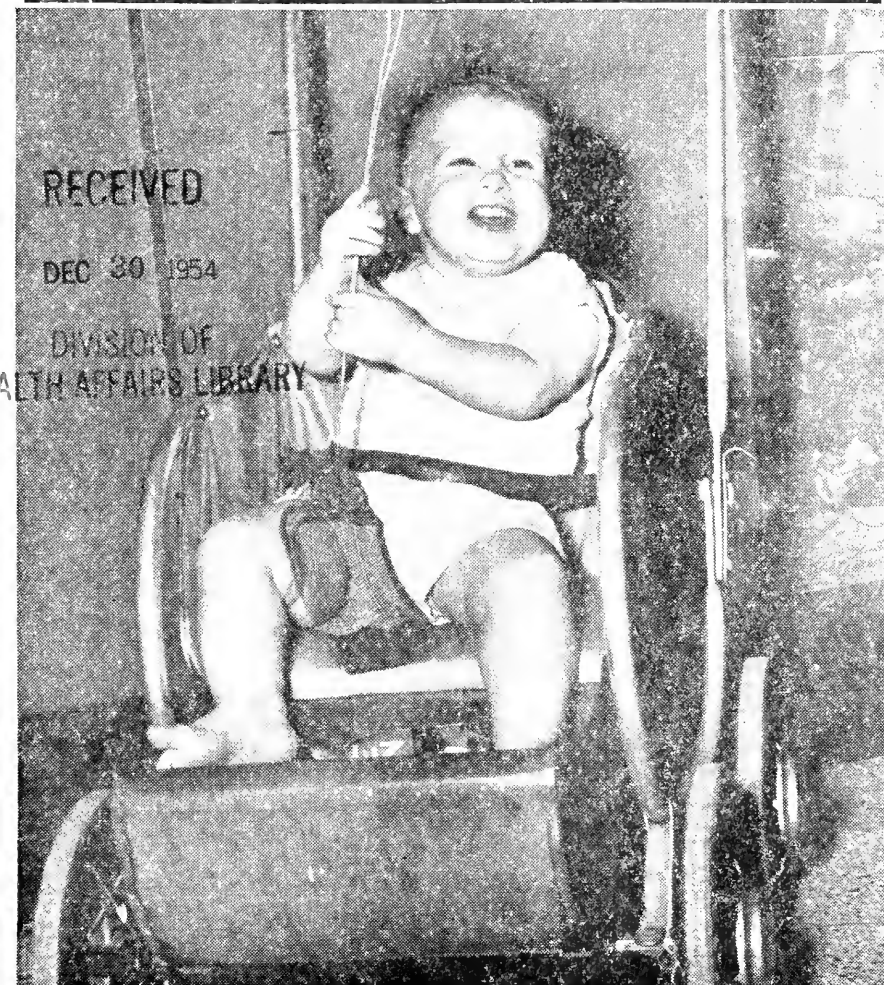
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DECEMBER, 1954

No. 12



ROBERT GLENN BOZARD, son of Mr. & Mrs. W. C. Bozard, Weldon, North Carolina. He had tuberculosis when three months of age.

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### FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Diphtheria  
 Flies  
 Hookworm Disease  
 Infantile Paralysis  
 Influenza  
 Malaria

Measles  
 Scarlet Fever  
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### SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care  
 Prenatal Letters (series of nine  
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 The Expectant Mother  
 Infant Care  
 The Prevention of Infantile Diarrhea  
 Breast Feeding  
 Table of Heights and Weights  
 Baby's Daily Schedule  
 First Four Months

Five and Six Months  
 Seven and Eight Months  
 Nine Months to One Year  
 One to Two Years  
 Two to Six Years  
 Instructions for North Carolina  
 Midwives  
 Your Child From One to Six  
 Your Child From Six to Twelve  
 Guiding the Adolescent

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# THE Health Bulletin



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Editor

## FIFTY YEARS OF TUBERCULOSIS CONTROL

By R. B. C. FRANKLIN, M.D., PRESIDENT  
North Carolina Tuberculosis Association  
Mount Airy, North Carolina

In May of this year (1954) the National Tuberculosis Association celebrated its fiftieth anniversary in Atlantic City, New Jersey, the city in which it was organized in 1904.

While this is not an occasion to laud the achievements of the past, a summary of the conditions that existed at the time of the organization of the National Tuberculosis Association can certainly serve to help one appreciate the present status in tuberculosis control and give courage with which to face the future.

Fifty years ago tuberculosis was rampant in the United States. It headed the list as the chief cause of death, and rich and poor alike suffered its ravages. While it did not confine itself to those of meager means, then, as today, its opportunities for destruction were greater in the poverty-stricken areas where families crowded together passed the germs from one member to another. However, the fact that it "ran in families" was not recognized as indicating communicability. The majority of the people who thought about it at all considered it to be inherited and many considered it a family taint or stigma. The idea that it might be prevented had not entered the minds of those who suffered from it or of most of those who tried to ease their suffering. So

many people died that each new victim considered a diagnosis of tuberculosis a death knell and resignedly accepted his fate. A quote from "Prologue From the Past," NTA annual report states:

"Effective drug therapy for tuberculosis was unknown and drugs were used chiefly for relief of cough and pain. Encouragement and sympathy and a feeling of hope contributed much to the condition of the patient who was lucky enough to receive treatment of any kind for this disease which had for so long been considered hopeless."

In discussing the means of control at that time the report states:

"There was little to make the average person who suffered from tuberculosis feel optimistic in those days, since facilities to treat the disease were available to so few. Trudeau's successes at Saranac Lake had led the movement toward establishment of sanatoriums but in 1904 there were only about 9000 beds for tuberculosis—a pitiful number to compare with more than 150,000 deaths and more thousands of sick people.

"Most tuberculosis sanatoriums and homes for consumptives in 1904 were supported by private funds from church groups, philanthropic societies or generous individuals. There were a

few county and municipal institutions; Massachusetts had opened a state sanatorium at Ruthland in 1898. Although then, as now, few tuberculosis patients could afford the cost of long term care, the concept of tuberculosis hospitalization as a public responsibility was not generally accepted, and free care was thought of as charity. The enlightened self-interest of our day, which recognizes the hospitalization of the tuberculous as protection of the community, was an unknown concept in 1904."

The foregoing statements highlight the situation at the time the National Tuberculosis Association was organized.

Those who are familiar with its history know that the program of a tuberculosis association has as its objective the education of the individual and of the community to the end that tuberculosis may be prevented and adequate provision be made available for diagnosis, treatment and rehabilitation of the tuberculous.

Significant in the history of the voluntary movement in tuberculosis control is the fact that local and state committees and societies came first: Pennsylvania, Ohio, New York City, Newport, to name a few. There were still others, including a number of sanatorium committees and TB committees of local and state medical societies. These committees and societies had recognized a need for such a movement and added to the impetus for the founding of a national organization. They have not lost their zeal for initiating new activities and pioneering new fields.

Significant also, at least to North Carolinians, is the fact that our own State was represented at this organizational meeting, even though at the time there was no North Carolina committee or society. However, the interest, as you can see, was already present, and just two years later, 1906, on the occasion of the fifty-third annual meeting of the North Carolina Medical Society, a number of the medical men in attendance met and organized the North Carolina Association for the Preven-

tion of Tuberculosis, which later became the North Carolina Tuberculosis Association.

Since this beginning the national voluntary movement has grown from a handful of committees to a nation-wide network of more than 3,000 local and state tuberculosis associations, all working toward a common goal.

It is inspiring to note with what persistence and dedication the leaders in the voluntary movement, Lawrence F. Flick, Edward T. Devine, Hermann M. Biggs and Adolphus Knopf, to name a few, pointed up the need for organized effort in combating this disease.

Flick, in April, 1882, without official backing, organized the Pennsylvania Society for Prevention of Tuberculosis. By persistent effort through the press, through publications of various kinds, through medical papers and talks, Flick kept the subject of tuberculosis alive in Philadelphia and in the state of Pennsylvania. In addition to organizing in Philadelphia the Free Hospital for Poor Consumptives in 1895, he started the first institute for tuberculosis research, the Henry Phipps Institute in Philadelphia. The story of its foundation is an interesting one and shows how enthusiasm for a great cause seldom remains unrewarded. From this center, with its research laboratory, its clinic and field studies, as well as its early hospital, has gone forth an influence that is reflected in most tuberculosis programs.

To Edward T. Devine the tuberculosis movement is largely indebted for introducing into the organized associations, at the beginning of the twentieth century, a strong lay influence to complement that of the physicians. Devine, as general secretary of the Charity Organization Society of New York, had found the cooperation of the laymen with the doctor to be of great value in the development of the Tuberculosis Committee of his Society. The benefit of this experience he gave to the National Tuberculosis Association when it was formed in 1904. How much this blending of lay and medical support helped to further the nation-wide campaign

against tuberculosis is hard to realize in these days when this cooperation is taken for granted.

The efforts of Hermann M. Biggs with reference to the reporting of pulmonary tuberculosis as a communicable disease deserve a place in this accounting of hardships and accomplishments in the movement. It is almost inconceivable that men who were leading the medical profession at that time should have taken the stand that they did against some of the measures advocated by Biggs. Opposition was intense and feeling aroused in medical circles was extremely bitter. The program announced by Biggs formed the nucleus of a complete scheme for the control of tuberculosis, but because of medical opposition it was four years before the Board of Health adopted, with changes, his plan.

To S. Adolphus Knopf we owe much in the development of the educational campaign against tuberculosis. It was he who, through the circulation of his world-famous "Prize Essay," his lectures and other contributions kept tuberculosis before lay and medical groups for many years.

North Carolina was not without its leaders who were sowing seeds for an organized state-wide crusade against tuberculosis. The following is an excerpt from a paper presented by Dr. Martin L. Stevens of Asheville at the annual meeting of the North Carolina Medical Society in Greensboro in 1905:

"That tuberculosis is a preventable disease and that its ravages can at least be lessened by an organized crusade against it, we all know. That the various local, state, national and international organizations for the prevention of tuberculosis have already accomplished much good, we also know. That every state should have an organized society energetically at work in this crusade, no one will gainsay. That especially our own state with its mecca for consumptives in the west and its high mortality among the Negroes from the same disease in the east, needs to be awake to preventive measures should be apparent to

all. That the medical profession should in this, as in other matters of preventative medicine, take the initiative, everyone admits. Many of the states have already organized and entered into the work. Ours has not. Questions which present themselves in this connection are, How should such an organization be brought about in order to secure the greatest and most effective co-operation, and where and when should it be started? Upon these questions I desire to speak as briefly and concisely as possible.

"The various anti-tuberculosis societies throughout our land have had their inception in various ways. Some are mere committees appointed by the State Governors or created by State Legislatures to investigate certain phases of the tuberculosis problem. Others are committees of their respective state or municipal societies. Still others are separate, permanent societies working in harmony with the State Board of Health and the State Medical Society and either independent of, or auxiliary to a central or national association. I will not take your time by discussing the relative merits of these various plans of organization, as I think all who are familiar with the scope of the work will see the superior advantage is of the plan last mentioned.

"Last year the President of our State Society, in his annual address, pointed out the need of organized effort in combatting this disease. The Secretary of our State Board of Health ably outlined some protective measures needed, and offered a set of resolutions placing the society on record as to protective measures necessary. These resolutions were unanimously adopted. Various persons have felt and spoken of the need of organizing the workers in our state who are interested in this subject. But such organizing is not entirely free from difficulty. In our town, Asheville, where so many patients congregate, and where we see so much need of preventive measures, it would be a comparatively easy matter to organize an

active anti-tuberculosis society. But I fear it would be looked upon as a *local* society organized to meet a *local* need, and that there would be trouble in interesting the rest of the State in it. Tuberculosis must be prevented outside the health resorts as well as in them. To get together representative men from all parts of the State for the purpose of effecting such an organization would not be an easy task. Moreover, no one feels authorized to call such a meeting. And an organization that is not representative would be of questionable benefit.

"At no time, and at no place do we get together so many of the cream of our profession as at our annual State Medical Society meetings. At no time and at no place could the organization of a State Society for the prevention of tuberculosis be more easily and properly effected than at the time and place of our annual meeting.

"Therefore, if it is clear to all—and I am sure it is—that such an organization should exist, I trust that someone will offer a resolution to the effect."

So obvious were the problems—a high death rate, sickness and suffering, lack of sanitation, lack of facilities, ignorance and apathy of the people as a whole about the disease—and so thoroughly were they studied, that the objectives stated in the constitution of the North Carolina Association in 1906 have remained basically the same through the years!

"The object of the association shall be the prevention of tuberculosis: (a) by the study of the disease in all its forms and relations; (b) by the dissemination of knowledge concerning its causes, prevention and treatment and by supplementing the work of the State Board of Health in this cause; (c) by such other means as may from time to time be deemed advisable."

This "study of the disease," research as we term it, has increased immensely the basic knowledge about tuberculosis. We have come a long way since Koch read his immortal first paper on the tubercle bacillus. That was just the

beginning. We have learned something now about the germ itself, its growth and metabolism and its resistance; particularly its resistance to drugs used in the treatment of the disease. It might be of interest here to note that some of this research is being carried out here in our own State in two institutions, with the aid of grants made possible from the sale of Christmas Seals. The aim of this study is to increase the present store of information on the disease and to interest more investigators in careers in tuberculosis and allied research. Dissemination of information is the relentless effort on which the associations continue to build their programs. The educational order of the day is education about the disease, education for case-finding, case supervision, treatment, rehabilitation and for research. It is through the dissemination of information that associations attempt to bridge the gap between scientific knowledge and the lay public.

In North Carolina, since the very beginning, the tuberculosis association composed of medical and lay people, the State Board of Health and other voluntary and official agencies have worked as partners. The developments which have taken place in the State depict to a remarkable extent what can be accomplished when people and agencies work together. This progress is attested to by the number of state-supported hospitals for the care of the tuberculous; the per cent of the population x-rayed each year; the reduction in the tuberculosis death rate; and the rehabilitation of the tuberculous.

But this is not intended to be merely a rehearsal of the successes of the past. That same persistence and dedication which characterized the leaders in the movement is needed today to meet the challenge of the future. The cooperative spirit which existed between the medical society, the State Board of Health and the tuberculosis association and other official agencies must remain intact until the disease has been eradicated.

In North Carolina today the magni-

tude of the problem is revealed in the fact that 14,487 new cases were reported in the past five years. This is an average of 2,896 new cases per year. Because of the stage of the disease in many patients entering the sanatorium, it is safe to say that many of the cases reported each year should have been brought under the supervision of physicians years before. While markedly better, reporting is not complete. Death certificates still show victims not reported as cases.

Our emphasis in the future must of necessity be more and better case-finding programs. There has been much concern about the future of mass case-finding programs in the State. It would certainly be a death blow to the control program if this service should be stopped abruptly because of a decrease in Federal funds. We need in addition to this service, more clinics throughout the State, more x-raying, the x-raying by private physicians, the x-raying of all admissions to general hospitals in the State, a continued emphasis on the x-raying of high incidence group and an intensified educational program designed to bring every person in the population fifteen years old and over in for a chest x-ray.

Since no large-scale programs of tuberculin testing are being conducted in the State, we are without an index

to the number of people who have been infected with tubercle bacilli. The number of new cases found yearly would indicate that infection is widespread. While the majority of those infected may never come down with the disease, each could become active and spread his germ to others.

The decreasing death rate means that more people who have tuberculosis get well than was true in former years. Many of those whose disease was advanced are in need of rehabilitation services. Rehabilitation presents a new challenge in light of modern treatment. How well we meet this challenge is dependent upon how much application we make of rehabilitation techniques.

Complacency and a false sense of security can readily undo what has been done in the State for tuberculosis control. Constant effort must be put forth to broaden the base of the informed individuals, who because of their knowledge of the problems are willing to give of their time and energies to support the control program.

In conclusion may I state that the first fifty years of voluntary tuberculosis control have been years of exciting developments. The next fifty may prove to be equally exciting and productive for there are still challenging areas of research and lagging areas of interest.

## **A REPORT TO THE PEOPLE ACTIVITIES AND FINANCIAL ACCOUNTING OF NORTH CAROLINA TUBERCULOSIS ASSOCIATION**

By C. SCOTT VENABLE, EXECUTIVE SECRETARY  
North Carolina Tuberculosis Association  
Raleigh, North Carolina

The North Carolina Tuberculosis Association receives its support directly from the people of North Carolina, and it is only fitting and proper that the NCTA make an accounting of its activities and expenditures for the review and appraisal of the many thousands of contributors to tuberculosis associations. The NCTA regards its

Christmas Seal money as a trust fund and attempts to report to the people through the *NCTA News Letter* and the *NCTA Annual Report*. The NCTA thanks the N. C. Board of Health for the opportunity and privilege of reaching 55,000 more North Carolinians through "The Health Bulletin."

The North Carolina Tuberculosis As-

sociation and its 102 affiliated local tuberculosis associations annually submit detailed information to the N. C. Department of Public Welfare and are licensed by it to solicit funds under the N. C. Solicitations Law. The NCTA and its affiliates receive their financial support solely through the annual Christmas Seal Campaign, with the exception of an occasional special arrangement made on military reservations. Ninety-three per cent of the funds are derived from a low-pressure mail campaign, most of which results from thousands of small donations of \$3.00 and under.

The 1952 Christmas Seal Sale provided the funds which the North Carolina Tuberculosis Association spent during the 1953-54 fiscal year. It receives its monies directly from affiliated local TB Associations who allocate a percentage of their campaign proceeds to state and national programs. Either 80 per cent or 75 per cent of the money raised by affiliated TB Associations remains in the local community. Counties or districts which employ local executive secretaries retain 80 per cent and the others 75 per cent. The state association receives either 14 per cent or 19 per cent under the same formula and 6 per cent goes to the National Tuberculosis Association. Actually, 94 per cent of all the money raised in the Christmas Seal Campaign remains in North Carolina to be put to work to assist in programs of tuberculosis control.

In 1952 local affiliates raised \$458,320.48; \$27,449.23 was allocated to the National, and \$70,038.69 was allocated to the NCTA. The NCTA spent \$75,465.45 during the 1953-54 fiscal year, has an unbudgeted surplus of \$2,514.23, has fixed assets valued at \$20,850.16 and has \$27,785.36 invested in a rotary supply fund which stocks health education supplies and campaign materials for resale to affiliates.

## PROGRAM ACTIVITIES

### Administration

The State Association is governed, the policies are determined, and the

budget is approved and adopted by a Board of Directors of 79 civic-minded, conscientious, unpaid citizens representing local communities from Sylva to Elizabeth City. The Board of Directors is a union of the lay and the medical, the business man and the housewife, the private physician, the health officer, the sanatorium doctor, the lawyer, the banker, the educator and many others bringing divergent points of view to the government of the Association. They all have one thing in common—they are vitally interested in and dedicated to the promotion of tuberculosis control with an eventual goal of eradication.

During the 1953-54 fiscal year the NCTA operated with a paid staff of 13: an executive secretary, six field representatives and program consultants, an office manager, three office secretaries and a shipping clerk. Seven professional staff members spent 880 days in the field and traveled 88,180 miles in North Carolina.

The six field representatives make planned and frequent visits to the field. It is through these visits that they make their contribution to local programs throughout the State. Of these, five do general field work in definite assigned territories which embrace all of the 100 counties in the State. The sixth field worker is available upon request for consultation on health education and program planning throughout the State and with special groups. Services given by general field work include:

- Organization (both of local association and of communities for special activities)

- Consultation on program activities
- Assistance in planning meetings and institutes

- Guidance in preparing exhibits and other visual aids

- Coordination of program activities with other agencies

The office staff of five persons engages in those activities which constitute such administrative details as record keeping, answering correspondence, organizing statistics, keeping the field



informed and shipping health education and Seal Sale materials.

We have one of the greatest assortments of educational materials of any health organization. More than 567,000 pieces of literature were distributed by the office staff last year. This does not include Seal Sale supplies, nor does it include the *News Letter* and *Target TB*, a publication for volunteers.

### Health Education

Continuous and unrelenting health education is the fundamental part of the campaign against tuberculosis. The resources upon which we depend for victory will neither be made available nor be used unless the public understands and supports the plan of action. Therefore, our health education program is based on a belief in the ability of individuals and communities to solve their problems when they have learned to recognize their needs. Our method is twofold—informing and obtaining action by persons on individual health problems and organizing and obtaining action by the community on public health problems concerned with the prevention and control of tuberculosis. This education permeates every phase of the tuberculosis control program.

For the purpose of this discussion health education is divided into two parts; community health education and school health education.

The objective in community health education is to assist communities in organizing for more healthful living and for the prevention and eradication of tuberculosis.

Activities in community or adult education are many and varied. All professional staff members offer consultation to local associations on the various phases of the program. A listing of these activities would include:

Promoting community organization for solving general health problems  
Teaching basic facts about tuberculosis

Creating public demand for adequate facilities and personnel

Keeping physicians informed of the new developments in tuberculosis

Promoting and interpreting mass

case-finding surveys

Paying out-of-state consultant for instructing nurses in tuberculosis nursing

Co-sponsoring a fellowship for a physician in postgraduate course in diseases of the chest

Directing attention to and promoting the x-raying of all admissions to general hospitals

Demonstrating new procedures

Training new executive secretaries for local tuberculosis associations

Cooperating with teacher-training workshops and institutes

At the present time the North Carolina Tuberculosis Association is renewing an effort toward the education of all adults concerning the basic facts about tuberculosis. In a planned presentation called the "Inside Story" volunteers are recruited, trained and helped to present these facts to community groups using a specific guide, a film and selected pamphlets.

The objectives in school health are: 1, to help schools convey to the students a personal and public attitude toward health that will enable them to make intelligent health decisions and practice desirable health habits; 2, to help relate the school health program to the health program of the community.

The Association's approach to the school health program is through planning with administrators and teachers. As a result of this planning, priority has been given to teacher-training through workshops and institutes; organization and promotion of school health councils; developing and supplying units of work for high school; supplementary aids; and consultation on general health. The efforts in school health extend to the colleges and universities of the State also. For a six weeks' workshop in health education at the North Carolina College at Durham the NCTA supplied a full-time instructor. All medical students at Bowman Gray, Duke and the University of North Carolina are supplied with *Diagnostic Standards in Tuberculosis*.

College teachers who have indicated

an interest are on the mailing list for new and interesting materials produced by the National Tuberculosis Association and supplied by this office. Sessions for seniors and other college students are planned and conducted upon request.

### Organization

Sound organization is one of the "musts" in the development of effective tuberculosis control programs. Our objective in this essential, succinctly stated, is to consolidate counties where feasible and practical so as many areas in the State as possible may have the benefit of the professional staff.

There have been at least three methods used by this staff in a continuing effort to reach this objective. The two in which most progress has been made are mentioned first.

1. Working for county-wide organization in all counties
2. The consolidation of multiple units within the same county
3. Where feasible, encouraging affiliates with a Christmas Seal Sale potential of becoming self-supporting to employ executive secretaries either singly or through the combining of two or more counties into district TB associations to coincide with health district lines.

### Cooperation

The success of a voluntary agency depends to a large extent upon its ability to understand and work with other agencies. To avoid as much duplication as possible and to carry out its role as supporter and aid to the agencies charged with the responsibility for prevention and control of disease, the Association spends much of its time cooperating with other agencies, both voluntary and official. The objectives are obvious: 1, to create an atmosphere of mutual respect and understanding; 2, to understand each agency's limitations and capabilities in order to promote the health enterprise. Among the official agencies with which we work are:

The North Carolina State Board of Health

The North Carolina Department of Public Welfare  
The North Carolina Department of Public Instruction  
North Carolina Sanatoriums  
North Carolina Agricultural Extension Service  
North Carolina State Employment Commission  
North Carolina School Health Coordinating Service  
North Carolina Division of Vocational Rehabilitation  
State Supported Colleges and Universities

Some of the non-official agencies are:  
North Carolina Public Health Association  
North Carolina Health Council  
North Carolina Conference for Social Service  
North Carolina League for Nursing  
North Carolina Family Life Council  
North Carolina Association of Health Educators  
North Carolina Voluntary Agencies Organization  
Denominational and other schools and colleges

### Case-Finding

Case finding, one of the items for which the State Association does not budget, comes in for its share of emphasis in the total program. The activities in regard to case finding are promotional and educational.

Through consultation with local associations, plans are made for intensifying case-finding programs throughout the State. This includes the promotion of x-ray surveys, clinics, and the x-raying of all admissions to general hospitals.

In cooperation with the Division of Tuberculosis Control, State Board of Health, the field workers, particularly the health educators on staff, aid in organizing communities for mass x-ray surveys. Also the Association cooperated with the Division in constructing and displaying a case finding exhibit at the Annual Meeting of the National Tuberculosis Association in Atlantic City, New Jersey.

Since the Federal reduction in appropriations to states for tuberculosis control, the Association has sponsored the appointment of a Legislation and Case-Finding Committee to study the case-finding needs in the State and to make suggestions and recommendations for meeting these needs.

### Rehabilitation

The greater need for rehabilitation services demands increased teamwork among agencies interested in the welfare of the patient. For its program of rehabilitation in 1953-54 the NCTA helped finance and co-sponsored an institute for persons from Southern States interested in the problems of the tuberculous, explored with the North Carolina Conference of Tuberculosis Secretaries, through the State Sanatorium directors, the possibilities of securing teachers for State TB hospitals, cooperated with the United States Employment Service in a pilot study to determine the working ability of patients after discharge, promoted through its affiliated associations the formation of rehabilitation and patient-service committees and worked with the State Departments of Welfare, Special Education, and Vocational Rehabilitation and other agencies concerned with the welfare of the patient.

### Seal Sale

For the North Carolina Tuberculosis Association the Christmas Seal Sale is an educational and organizational tool as well as a financial one.

Educators agree that in the educational field there is such a thing as "teachable moments" and that there exists a "law of readiness" which conditions an individual's ability to perceive. The Christmas Seal Sale provides these "teachable moments" for individuals with regard to tuberculosis and, therefore is a means of spreading facts about tuberculosis to create understanding and invoke action advantageous to tuberculosis control.

The Christmas Seal Sale is also an invaluable organizational tool. Most of the local tuberculosis associations organized and doing an excellent job in

tuberculosis work today began as Seal units. The Christmas Seal Sale initiates and keeps interest in tuberculosis alive. It directs the individual and public mind toward tuberculosis problems and provides a means for participation in tuberculosis work.

As a financial tool forty-seven years of experience has proved the Christmas Seal Sale reliable and capable of growing along with tuberculosis control programs. The Sale has grown in North Carolina from \$3,961 to \$447,021.50 in 1953. The Christmas Seal Sale is a campaign with a minimum amount of pressure. It offers the public the opportunity of contributing voluntarily to the specific cause of tuberculosis control. Each year the public casts a vote of confidence through its many thousands of responses to the mail campaign.

The NCTA's Christmas Seal Sale services to its affiliates include consultation on methods, techniques and materials; promotion and publicity; operation of supply service and the *Seal Sale News Letter*.

### Research

One per cent of North Carolina's total Christmas Seal Sale goes to the National Tuberculosis Association to be used specifically for medical and social research.

Last year nineteen states and the District of Columbia received fifteen medical research fellowships totaling \$49,900 which were awarded to promising young scientists under the sponsorship of the National Tuberculosis Association and its medical section, the American Trudeau Society, and thirty-four grants-in-aid for research totaling \$199,056.

Under this program North Carolina received two research grants and one fellowship grant. Recipients and the subjects of their research projects were:

### Research Grants

Dr. Hilda Pope  
Duke University School of Medicine  
Durham, North Carolina  
"Metabolism of Tubercle Bacilli"

Dr. H. Stuart Willis  
 North Carolina Sanatorium  
 McCain, North Carolina  
 "Studies on Vaccination Against  
 Tuberculosis"

#### Fellowship Grant

Miss Jean Ellen Hawkins  
 Duke University  
 Durham, North Carolina  
 "Metabolism of Virulent and Avirulent  
 Variants of Tubercle Bacilli"

The NCTA is constantly aware that there is no phase of tuberculosis—its prevention, discovery, diagnosis, treatment and rehabilitation of the patient—that is not subject to enlightenment by medical and social research, and will repeatedly interpret the need for, and value of, continuous research.

#### Financial Statement

No attempt has been made here to report the activities of local affiliates which expend the major portion of Christmas Seal funds (\$350,896) and make their own accounting to the community. In 1953-54 when listed as specific items, the NCTA financial statement shows a disbursement of \$29,-312 on professional salaries; \$14,565 on clerical salaries; \$13,290 on travel; \$3,500 on grants to local tuberculosis association; \$1,769 on publications, news letter, printing and dissemination of information. Other budgeted items were expended for training institutes, program conferences, the NCTA annual meeting, scholarships, payment on and maintenance of the NCTA headquarters, telephone, postage and express, dues and subscriptions, office supplies and equipment, repairs, audit, insurance

and bonding, bank exchange, Social Security, health insurance and annual physical examinations for employees.

The NCTA total expenditure of \$75,-465.45 was directed towards the promotion of the various phases of its program activities. The professional staff was constantly engaged in cooperating with its affiliates and official and voluntary agencies on both a state and local level in initiating and organizing for better case-finding, health education and rehabilitation programs. As pointed out before, the Christmas Seal Sale Campaign itself is a most important part of its program, with its inherent educational and promotional values. The campaign interlocks and undergirds and permeates all program activities. The Christmas Seal is a priceless symbol, representing the program itself, which has enabled the tuberculosis Association to make its contribution to TB control in cooperation with its official agency partners.

To demonstrate the manner in which services are rendered in promotion of program activities, expenditures are allocated to these activities as the following financial statement indicates:

#### Expenditures by Service

Health Education and	
Information .....	\$23,636.49
Rehabilitation .....	5,757.35
Administration .....	12,676.95
Seal Sale (includes 47% usually allocated to health education) .....	15,288.01
Field and organization and promotion of case finding...	18,106.65
	<hr/>
	\$75,465.45

## DOES IN-SERVICE EDUCATION FOR TEACHERS IMPROVE EMOTIONAL ADJUSTMENT OF THEIR PUPILS?

By R. M. FINK, Ph.D.

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State Board of Health  
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In 1951 plans were developed with the primary teachers in the Durham County Schools for a program of in-service training in mental hygiene. One aim of the project was the improvement of the emotional adjustment of children during the first three years of school.

The California Test of Personality, Primary Series, Form A, in spite of its recognized limitations, was chosen as the most practical (with respect to time and funds) instrument for use in attempting to evaluate the status of emotional adjustment in the various groups of children.

The schools in the county were divided into four groups. The teachers of the **Control** group (two schools) did not participate in the program of in-service education.

Teachers in **Group A** (three schools) were informed of the specific purposes of the project and were furnished, from time to time, with selected publications. No other work was done with these teachers.

Teachers in **Group B** (two schools) received the same publications and for a period of three years participated in a series of meetings which included lectures, discussions, films, etc. The following are examples of the themes of some of the meetings: Meanings of Mental Health, How Mental Health Develops, Pressures and Frustration, The Right-Wrong Concept in Everyday Life, Fear and Guilt, Feelings of Hostility, Promotion and Mental Health, Discussions of Individual Children.

Teachers in **Group C** (three schools) received the same publications and participated in meetings on the same

topics. In addition, these teachers took the adult form of the California Test of Personality and had an opportunity to discuss results individually and as a group. Following this, a few printed materials dealing with self-understanding were furnished for teachers to study as they saw fit. Three discussion meetings were held for these teachers using the following films: Preface To A Life, Feeling of Rejection, Feelings of Hostility.

There were many uncontrolled factors in the project, including: teacher turnover, age of teachers, experience, training, personalities of teachers, etc. Had it been possible to allow for all of these factors, no attempt would have been made to do so, since these factors can seldom be controlled in a typical school system. Each teacher employed after the first year of the project did attend two orientation meetings before joining the groups.

In April, 1951, before any meetings had been held with teachers, all third grade children in the county were tested. On approximately the same dates in 1952, 1953, and 1954 all third grade children were tested. (Note that these were different children each year.) There is no way of knowing that the groups of children in 1951, 1952, 1953, and 1954 were equally well adjusted at the times when they first entered school.

### Results—Boys

TABLE 1 shows the mean (average) scores of boys in each group and in each year. It should be read—"Boys in the control group in 1951 averaged 72:15; in 1952 they averaged 70:22, etc."

**TABLE 1. Mean Total Adjustment Scores of Third Grade Boys—California Test of Personality, Primary Series, Form A—Durham County.<sup>1</sup>**

	1951	1952	1953	1954
Control Group	72.15	70.22	69.27	73.90
Group A	68.32	73.48	69.84	63.76
Group B	66.18	71.83	70.10	72.93
Group C	69.04	74.00	75.18	73.96

<sup>1</sup>Critical Ratios of Differences Between Mean Scores in TABLE 1

Between scores in			
	1951-52	1951-53	1951-54
Control Group	.84	1.40	.96
Group A	1.38	.41	1.56
Group B	2.86	2.01	3.61
Group C	3.16	3.50	2.84

Considering the Control group, it appears that only in one year (1954) was there an increase in score over the score for 1951. In this instance there is a seventeen percent possibility that this difference was due to chance. This difference is slight, and we may reasonably say that the true scores of the children in the Control group changed little, if any, over the four year period.

When Group A is considered it can be shown there is fair chance that the increase in 1952 is a true increase, although there is an eight percent possibility that this increase is due to chance. There is a thirty-five percent possibility that the slight increase in 1953 is due to chance. The score in 1954 shows a decrease. It appears that there may have been erratic changes in the scores of this group over the four year period.

Group B shows an increase in 1952, 1953, and 1954 over the 1951 score. In 1953, there is a ninety-eight percent possibility that this increase is not due to chance. In 1952 and 1954 the possibility that the increases are due to chance is less than one percent. It can be said with reasonable certainty that the scores of Group B were appreciably higher in 1952, 1953, and 1954 than in 1951.

This same statement can be made with a little more certainty regarding Group C as the possibility of the in-

crease being due to chance is less than one percent in every case.

While no precise conclusions can be stated, we may say that the test results seem to indicate that:

1. The use of certain pamphlets alone by primary teachers did not have a direct influence on the emotional adjustment of these male primary pupils as measured by the particular test. This, if true, is in agreement with professional opinion.
2. The total in-service education program, using pamphlets, lectures, discussions, and films with the primary teachers may account for the improvement in emotional adjustment of these male primary pupils as measured by this particular test. This, if true, verifies professional opinion.

#### Results—Girls

**TABLE 2. Mean Total Adjustment Scores of Third Grade Girls—California Test of Personality, Primary Series, Form A—Durham County.<sup>2</sup>**

	1951	1952	1953	1954
Control Group	72.55	72.76	74.56	76.10
Group A	75.40	72.90	75.79	71.05
Group B	69.56	75.33	71.26	76.63
Group C	74.81	77.16	77.19	77.04

<sup>2</sup>Critical Ratios of Differences Between Mean Score in TABLE 2

Between scores in			
	1951-52	1951-53	1951-54
Control Group	.11	1.14	1.99
Group A	.75	.12	1.29
Group B	3.60	.97	4.45
Group C	1.40	1.61	1.63

An examination of the scores of the Control group shows an increase each year, both over 1951 and over the preceding year. The possibility that these increases over the 1951 score are not owing to chance are respectively: fifty-four percent, eighty-seven percent, and ninety-eight percent. There is reasonable certainty that the 1954 increase has some cause other than chance.

The scores of Group A are erratic and in no instance may we be reasonably certain that chance can be elimi-

nated as a cause of the increases or decreases.

The scores of Group B show an increase over the 1951 score in every instance. In 1952 and 1954 it is virtually certain that these increases are not owing to chance. There is an eighty-four percent possibility that the 1953 increase is not caused by chance.

Group C shows an increase in each year over the 1951 score. The possibilities that these increases are not due to chance are respectively: 1952—ninety-three per cent, 1953—ninety-four per cent, 1954—ninety-five per cent.

Again, as in the case of the boys, no final conclusions may be drawn. The results, however, are again suggestive that:

1. The use of pamphlets alone by the teachers did not influence the emotional status of the girls in Group A as measured by the particular test.
2. The total in-service education program may have accounted for the increase in emotional adjustment

of the girls in Groups B and C as measured by the tests.

#### GENERAL RESULTS

1. The girls scored slightly higher in total adjustment than did the boys. This is generally expected when this particular test is used.
2. The results show no indication that the small amount of work with teachers in Group C aimed at self-understanding influenced the scores of the pupils. It is the author's opinion that teachers in Groups B and C both gained to some degree in self-understanding as a result of discussing emotional problems of children. The small amount of additional help given to Group C could have been expected to produce only slight additional understanding for the teachers in this group.

The results of this study appear to justify the continuation of this type of in-service education in mental hygiene for teachers, with the ultimate expectation of improving the emotional adjustment of their pupils in the primary grades.

## NOTES AND COMMENT

BY THE EDITOR

**OUR FRONT COVER**—We are indebted to an intelligent young woman on the staff of the North Carolina Wildlife Resources Commission for the photograph of this youngster who was admitted to the Eastern North Carolina Sanatorium on January 16, 1953 with a diagnosis of tuberculosis when he was only three months of age.

We are indebted to Dr. H. F. Easom, Medical Director of the Eastern North Carolina Sanatorium for the following information: "His only known exposure to tuberculosis was his Grandfather and this occurred when he was about one month old. On admission to the hospital he weighed 8 pounds 9½ ounces which was only two pounds more than at birth. His skin and mucous membranes were dry and his

temperature was 102 degrees. He was started on streptomycin, PAS and isoniazid as well as fluids and adequate nourishment. Within a few weeks there was clinical improvement and within three months there was definite x-ray improvement. In about eight months his x-ray was clear and his clinical condition was excellent. He now weighs 28¾ pounds, eats well and seems to have suffered no ill effects from his tuberculosis or his chemotherapy. He continues to receive all three drugs and it is our plan to continue them for at least two years from the time they were started."

#### EUGENICAL STERILIZATION PAMPHLET

A pamphlet, "Sterilization—The North Carolina Program," has been

prepared by the Eugenics Board of North Carolina for the purpose of answering questions most frequently asked about sterilization. These questions relate to the type of operation, its effects, for whom to recommend sterilization, and some of the procedures for working with the patients and their families. It is intended to help the persons administering the program to the extent that they will be able to give the people immediately concerned an understanding of what is involved in the sterilization process and an appreciation of its protection in appropriate situations.

The eugenical sterilization program of North Carolina has been in process for 25 years. The law which is the basis for the sterilization program provides specifically for the sterilization of three types of cases upon authorization of the Eugenics Board. These are the "feeble-minded, epileptic and mentally diseased." The consent of the next of kin and also the individual concerned, if 21 years of age or over, is essential. For non-institutional persons the petition for the operation is submitted to the Eugenics Board by the county superintendent of public welfare. If the person concerned is a patient at one of the State institutions, the superintendent of the institution submits the petition. This step is taken on the part of the petitioner only after careful consideration has been given to the welfare of the individual concerned and his family situation. Medical, psychological, psychiatric and social information concerning the individual and family is necessary. Those desiring more information about this program should address their communications to the Eugenics Board of North Carolina, Box 2599, Raleigh.

#### HOMELESS MEN PROBABLY SPREAD MUCH TB

The homeless men of "Skid Row" quite probably are a major source for the spread of tuberculosis in the United States, a Minneapolis survey showed

today.

An 11-month study of the client population of the Minneapolis Salvation Army Men's Social Service Center showed the rate of new cases of tuberculosis was 55 times as great as the rate in the city's general population during the same period.

The survey was reported in the Journal of the American Medical Association by Dr. Herbert W. Jones, Jr. medical director of the service center, Jean Roberts, Minneapolis director of public health records and statistics, and John Brantner, clinical director of the center.

Most of the men studied came to the center voluntarily from Skid Row. About 70 per cent of them said "the abusive use of alcohol" was their major problem. Only 30 per cent were residents of Minneapolis, and 20 per cent residents of Minnesota. Fifty per cent had no established residence in any state.

The high rate of tuberculosis occurred in a highly mobile group living under conditions likely to foster infection of others in the same group, the writers said.

"The men in this group generally sleep in dormitories, whether in cheap hotels or in the various rehabilitation centers throughout the country," they said. "They are generally in a fatigued physical condition, and their standards of cleanliness and personal hygiene tend, through economic necessity, to be low.

"This rate occurs in a population group that is very likely to take temporary jobs as food handlers—cooks, cooks' helpers, dishwashers, etc.—situations in which the possibility of transmission of the disease to the general population is a factor."

They said there is no reason to believe the incidence in Minneapolis is much different from the rate in other cities. In fact, the incidence might be higher if the survey had covered the older, more permanent residents of Skid Row, they said.







